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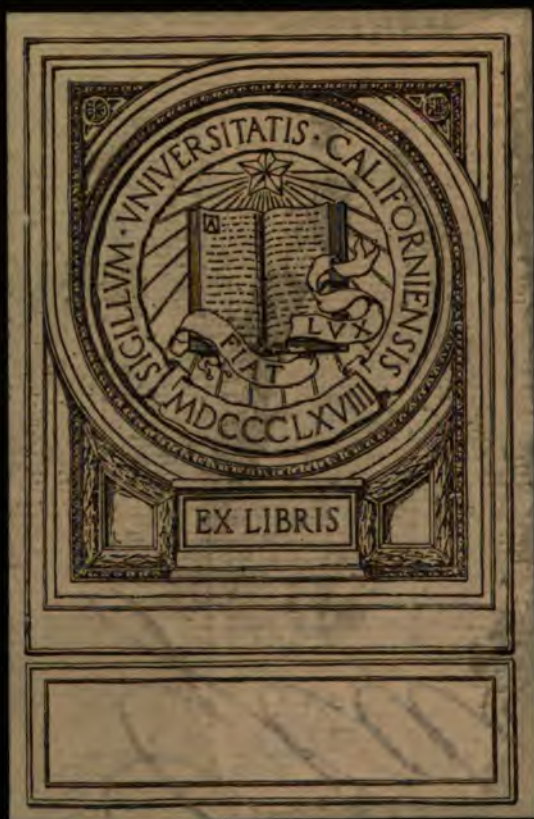
OLD CRITICISM
AND
NEW PRAGMATISM

J. M. O'SULLIVAN

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**OLD CRITICISM AND
NEW PRAGMATISM**

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BY

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PREFACE

IN spite of their seeming diversity of subject, there is an underlying unity of purpose in these Essays. They are an attempt to exhibit, in part at least, the Kantian system as an immanent philosophical criticism of first principles; and, viewing the Critical Philosophy and Pragmatism from the standpoint of a different school, to lay bare the connection which exists between their theories of Truth in consequence of their attachment to Radical Empiricism.

The first Essay, on Kant and Hegel, has already appeared in German; it was published in Berlin as a monograph of the *Kant-Studien*. For permission to reproduce it here, in an English version, the author is indebted to the courtesy of the editors of *Kant-Studien*.

A word of explanation is, perhaps, necessary with regard to the translation of the peculiar Hegelian term *Gesetzt* as "explicitly put." The rendering is, no doubt, inelegant; its very clumsiness, however, will serve the useful purpose of

accentuating the technicality of the original. "Hegel [to quote from Baldwin's *Dictionary of Philosophy*, Vol. I., p. 461] is extremely anxious to distinguish in the progress of the dialectical method what is so far *explicit* (*gesetzt*), and what is thus far only *latent* or *potential*, in the development of any conception, he frequently has occasion to insist that a given feature asserted to belong to any object is not yet the explicit result of presuppositions . . . but appears as a fact whose potentialities we, the philosophising readers, predict in advance, or observe while they are as yet in the object itself only latent. What is latent thus becomes the same as what we observe externally to be in the object." In the translation also, for *Seyendes*, the more concrete form of *Seyn* (Being), *Be-ing* has been adopted by way of contrast to *Being* as ordinarily spelled.

For the English rendering of the excerpts from Kant and Hegel the essays have drawn upon the translations of Meiklejohn, Hutchison Stirling and Wallace. In the case of Kant the references marked A. are to the pages of the first edition (1781), those marked B. to the pages of the second edition, and those marked M. to Meiklejohn.

The writer desires to acknowledge his indebtedness in a special manner to his teachers, Professor Magennis, of University College, Dublin, and Herr Geheimrat Windelband, Pro-Rector of the University of Heidelberg. His thanks are due also to his friends, Mr. C. J. Murphy, D.Ph., and Mr. C. P. Curran, M.A., for the correction of the proofs, and for valuable suggestions while the work was going through the Press.

DUBLIN, *September 15th*, 1909.

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**A COMPARISON OF THE METHODS OF KANT AND
HEGEL, ILLUSTRATED BY THEIR TREATMENT OF
THE CATEGORY OF QUANTITY**

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CHAPTER I.

INTRODUCTION

1. KANT'S STANDPOINT AND METHOD.

WE may briefly designate Kant's task as an enquiry into the validity of Axioms,* or, in his own terminology, of synthetic judgments *a priori*. By this means he will test the validity of the disciplines founded on these axioms—viz., Metaphysical, Mathematical and Natural Science, Ethics and Æsthetics. He will at the same time determine the limits of the valid application of human reason.† The axioms, and consequently the disciplines based on them, are valid if they rest on presuppositions by which alone we can explain the possibility of experience. "In transcendental knowledge, guidance, so long as we are dealing with concepts of the Understanding only, is to be found in possible experience. For here the proof does not show that the given concept

* Cf. Windelband, *Praeludien*, p. 297.

† "It would seem natural that we should have asked what extent, what truth, and what value the *a priori* knowledge of the understanding could possess." A. 3, B. 7. Cf. A. 10, 57.

(for instance, the concept of that which happens) leads directly to another concept (that of a cause). This would be a jump which nothing could justify. What our proof really shows is, that experience itself, and therefore the object of experience, would be impossible without such a (causal) connection." *

But the attempt to discover the conditions of the possibility of experience may be undertaken in a variety of ways. Perhaps the most natural method (and one which Kant's language sometimes all too readily leads one to confuse with his own) is the psychogenetic. This strives to give a natural history of the growth of knowledge ; to show how according to certain psychical laws the present complex consciousness of the individual has, during his own life, or that of his countless ancestors, been evolved from a few primary elements. But this method, in so far as, deserting its proper sphere, which is to give a history of consciousness, it pretends to pronounce on the validity of knowledge, is guilty of the fallacy known in logic as the vicious circle. Like every other empirical science it presupposes the correctness of its fundamental axioms, and yet it presumes to pass judgment on their validity.†

* A. 783, B. 811. Cf. A. 93, B. 125, A. 766, B. 794, and A. 126, B. 195. "The possibility of experience is what gives objective reality to all our knowledge *a priori*."

† Cf. Hegel, *Werke* VI., § 38. Cf. A. 86-87, B. 118-9, and *Prolegomena*, 21 [a].

Kant will also discover the "sources" and conditions of knowledge and experience; but his task is entirely different from that of the psychologist or the psychogonist.* The "sources" which he seeks are not the psychical elements out of which the present experience has been in course of time evolved, but the immanent, constitutive grounds which form as it were the inner conditions of that experience. The expressions "thought" and "knowledge" are ambiguous; they may mean either the psychical process of knowing or thinking, or the content which forms the object of that process. The psychogonist is sometimes tempted to lose sight of this distinction, and, in so far as he does recognise it, his business is to explain, in accordance with the fundamental axioms of his science, how the content in its present complicated form has, through the interaction of the processes or their physical basis, come into existence. The conditions which Kant seeks are to be found by means of an investigation

* Cf. A. 86-7, B. 118-9. Also B. § 18, where he distinguishes between the objective unity of self-consciousness (with which he has to do) and the subjective unity (of psychology). Also B. 154, first sentence. His frequent criticisms of Hume, that he substituted a subjective for an objective necessity, agree with this. And B. 167-8 shows that the evil is not diminished if we substitute a rational for an empirical psychology. But see especially *Prolegomena*, § 21 [a]. "Here there is no question of the origin of experience, but of what is contained in it. The former question belongs to empirical psychology, and could never be properly developed without the latter, which belongs to the critique of knowledge and of the understanding."

of the content, not of the psychic process. His purpose is, whilst keeping within the fact, to analyse the content of experience in order to find out the inherent and immanent presuppositions which alone render it possible. Experience is not examined or analysed in order to find out how it has, as a matter of personal or social history, arisen in the human soul, but to discover its essential constitution. The "sources" which he seeks are "grounds." The possibility of experience as we know it, making claim to hold good not only for me now, but for all other human beings, and at all times, is explicable only on certain assumptions as to its constitution. These presuppositions, conditions, forms, or however we may call them, which must enter into the constitution of experience, if the latter is to be possible for us, Kant calls *a priori*. In other words, the acceptance of experience, or an objective order of events in space and time—i.e., an order which claims to be valid for all and at all times—forces on us also the acceptance of certain forms or general principles, which an analysis of the very possibility of that experience shows to be necessary to, and to be involved in it as constitutive factors.*

But though the critical and the psychologistic methods are thus *toto cælo* distinct, yet the stand-

* We thus see that *a priori* and *a posteriori* are not to be interpreted in a psychological sense; if this is done, then all hope of understanding the critical philosophy is gone. Cf. Windelband, *Lehrbuch der Geschichte der Philosophie*.

point at which problems *present* themselves to Kant for solution must be described as psychological—and this is a factor of great importance in determining not only the form, but also to a large extent the substance of his philosophy. He accepts Hume's atomistic account of sensation and sense-perception, and the problem then is how synthetic judgments *a priori* are possible for an individual whose intuition is of such a character. Hume, as we know, following the psychogenetic method, thought he had demonstrated the impossibility of all such judgments. But Kant pushes the enquiry a stage further back by asking how experience itself is possible for an individual so constituted. How can I claim that the order in space and time of my sensations is not merely subjective, but must hold good for all other human beings? The constitutive pre-suppositions which render such an experience possible enable us at the same time to explain the possibility of synthetic judgments *a priori*.*

This central position, as criterion or touchstone,

* Though, as remarked already, and as we shall have occasion to illustrate lower down when dealing with the relation of the "Analytic" to the "Aesthetic," a psychological and temporal interpretation of *a priori* is out of the question as far as Kant is concerned, yet the importance which the distinction of *a priori* and *a posteriori* have in the system is due to the fact here referred to, that the standpoint at which problems present themselves to Kant is that of, what may be called, the psychological individual. Hence this distinction must appear unduly subjective to Hegel, who holds that this standpoint itself is derivative, and calls for explanation.

which experience occupies in the Kantian theory of knowledge is perhaps what most characteristically distinguishes him from his predecessors in the history of modern philosophy. These, on the strength of certain assumptions as to the character of our cognitive faculty, tried, as it were, to deduce the character and pass judgment on the value of experience. The reversal of this position is what really constitutes Kant's change to the "Copernican" point of view. With this is closely connected his rejection of the epistemological monism of the previous systems, whether empirical or rational. For both sensationalists and rationalists agree in refusing to allow a difference in kind, so far as epistemological function is concerned, among the elements which compose valid knowledge. Hume refused to admit the validity of any conception which could not point to its parentage in sense impression, whilst the rationalists held that true knowledge is to be attained only in the unfettered exercise of pure reason. For both, experience was a mere heap of sensations; but whereas for Hume this alone had validity, the rationalists regarded it as almost valueless and set up another knowledge *beside* or *beyond* it, which alone, as the product of pure reason, possessed full validity and worth. Kant opposes both of these extreme tendencies, and in reconciling transcends them. Beyond experience there is no valid knowledge—pure reason can of itself generate none—but experience is no longer a mere con-

glomerate of sensations, but the reason-infected given of sense. Reason is not transcendent of, but immanent in, experience—and in this return to the concrete we shall find that Hegel is fully at one with Kant. But though rejecting the extremes of rationalism and empiricism, Kant preserves and unites the characteristic features of both. Knowledge or experience is constituted of two kinds of elements whose functions and interests in the structure are different. On the one hand new content is ever being added to our knowledge, and on the other this must be fused into *objective* unity with the content already present. Sense alone is incapable of giving rise to experience, even the experience of the empiricists, and reason by itself can do no more than analyse knowledge already possessed, but can never generate new. "Thoughts without contents are empty, intuitions without concepts are blind."*

Whether or not, from the standpoint of the critical philosophy, the distinction between "sense" and "understanding" can be maintained with that sharpness which Kant believed possible, cannot be decided here. The important aspect of the distinction, as far as the critical *method* is concerned, is that it brought clearly to light the two opposing interests or tendencies operative in human knowledge: on the one hand, the new material, which is being continually presented to be added to and

* A. 51, B. 75.

brought into unity with the old, ever prevents the system of knowledge from being "rounded off"; on the other, we are always striving after this completeness in system, struggling to make our known world a thoroughly systematised, articulated and self-consistent whole.*

In the Aesthetic, where he investigates the general *a priori* presuppositions of experience from the side of sense impression, Kant puts forward space and time as the *a priori* forms of sense experience.

Things, our own body included, are outside each other in space, and it is evident that space itself is the most general and necessary logical presupposition of this relation of outerness which things have to one another. Space in fact is the universal form of outer perception, or to speak less psychologically, is the mere possibility of external phenomena,† which, after we have abstracted from all definite content (the matter), mean space.‡ Since things as extended are intuited and perceived and not conceived, and since abstraction§ has been made from all definite content or matter, this space is described as "pure intuition." This

* Kant's language would often mislead one into interpreting the distinction of "sense" and "understanding" psychologically, and in the sense of what Kantians might call naïve dualism, the distinction is epistemological not psychological.

† Cf. A. 429, B. 457, note.

‡ Cf. *Proleg.* § 13, note 1; and Wallace, *Kant*, p. 161; Hegel, *Encyc.*, § 42.

§ Cf. A. 27, B. 43, *loc cit.*

does not mean that "pure space" can as such be intuited or represented,* but that it is the pure (unmixed with matter) form of all intuitions and representations having spacial relations with each other.

Space as it is actually represented and intuited is limited and finite; but as the limiting conditions are the contents, when, in order to get "pure intuition" we abstract from these, there is naturally nothing left to set definite bounds to space—i.e., in Kant's language space is infinite, or, perhaps more correctly expressed, limitless or endless. Time is subjected to a similar treatment, and is found to be the necessary condition of the succession of phenomena, the *a priori* form of internal sense, a pure intuition† and infinite. It differs from space, however, in that whereas the latter has application to extended objects only, time can be applied both to extended and unextended—i.e., psychical states as such. It is primarily the form of internal sense, but since even external objects are presented through psychical states, it becomes indirectly also the

* B. 207. "Space and time are not in themselves objects of perception." And further as regards time, cf. B. 219, 225, A. 283, B. 226, A. 200, B. 245, and A. 450, B. 480, note. Similarly in B. 168, note, he adverts on the incorrectness of ascribing the unity of formal intuition entirely to sense. Cf. also *Metaphysical Foundations of Natural Science I.*, 1, 2.

† The intuitional character of time does not seem so clear as that of space. It is an intuition "because all its relations can be expressed in an external intuition." A. 33, B. 50.

form of external sense ; it is thus the most general form or condition of events both in the psychical and physical worlds.* They are not, however, presuppositions or *a priori* conditions or forms, in the sense that we are conscious of them before all experience. They are rather ideal constitutive presuppositions which an analysis of experience shows to be necessarily imbedded in it and essential to its very existence. Hence any constructions which we make in them (as in the case of mathematics) must necessarily hold good of all objects of experience, since the latter are possible only under conditions of space and time.

Space and time are thus the necessary and *a priori* forms of experience.† But then all the content of our knowledge comes to us as a manifold, unconnected and unsystematised, resembling in this respect the motes of the sunbeam. As such it neither is experience, which “is a totality of related and connected representations,”‡ nor does it present us with its most general conditions, “the representations of space and time . . . since these can be generated only by the synthesis of the manifold presented by sense in its original

* The introduction of this distinction of inner and outer sense at this early stage in the “Critique,” and the relation which holds between them, as here exemplified, is due to Kant’s psychological starting point already referred to.

† That space and time are the only possible conditions *a priori* of experience from the side of sense is not proved, but only assumed by Kant. Cf. A. 41, B. 58.

‡ A. 97.

receptivity.”* Nor can we explain the objectivity of an order in space or time by any appeal to the laws of association. For the very law of reproduction, which is here called in to explain the connection and unity of our ideas, presupposes that these are already subject to rule.† And even were a subjective synthesis explicable in this manner, I should still have no right to claim for it that it must hold good for every human intelligence as well as for mine.‡ What then are the conditions which are necessary to guarantee objectivity? We cannot appeal to a comparison between our idea and some object which is entirely unrelated to it; we cannot thus transcend or go beyond our ideas.

“Now we find that our conception of the relation of all knowledge to its object contains something of necessity, the object being looked upon as that which prevents our knowledge from being determined at haphazard, and causes it to be determined *a priori* in a certain way, because, as the conceptions all refer to an object, they must necessarily in regard to that object agree with each other—that is to say, possess

* A. 99-100.

† Cf. A. 104.

‡ We thus see that the necessity for the “transcendental deduction” of the categories is very closely connected with Kant’s starting point in the “psychological individual.” For anyone who, like Hegel, on whatever grounds, rejects this starting point, this standpoint at which the problems are envisaged, such a deduction would not seem necessary.

that unity which constitutes the concept of an object." *

Since, therefore, the characteristic which distinguishes objective knowledge, or knowledge that claims to be such, from mere fancy or subjective connection of ideas—namely, the compelling necessity which accompanies it, cannot be explained by a reference to any supposed object lying outside experience, we must regard it as due to the necessary connection existing between the contents of the ideas themselves. In Kant's terminology, judgments of perception, which simply express the subjective connection of two mental states, are to be distinguished from judgments of experience, which claim to express an objective connection between the contents of our ideas, by the fact that in the latter, in addition to the mere sense perceptions, there is present a category or a necessary and universal rule according to which the contents are connected. An objective experience, therefore, is possible only if its content is synthesised into a systematic unity by means of concepts or laws. We arrive at the same result from the following considerations.† To explain the presentation of time and space, since they are not themselves objects of perception,‡ the

* A. 104, 105. Cf. continuation of this quotation, and *Prolegomena*, §§ 17, 18, 19, where he treats of the distinction between judgments of perception and judgments of experience.

† Cf. *The Analytic of Principles*.

‡ Cf. *supra*, p. 11, note.

unconnected contents must be synthesised. Thus we get an order of our sensation-contents in time and space; but whether this can be looked upon as objective—*i.e.*, as valid for all—cannot be directly decided by a comparison with an objectively pure space or time, so that we should be able to determine the relative position—*e.g.*, of two events in time, by a comparison of each with the time series in order thus to discover its place therein. Such a comparison is impossible for the simple reason that one term of the relation—namely, pure time (or pure space)—cannot be perceived. This claim to objective validity, which we make for the time sequence which holds among the contents of our representations, can be justified only if they belong to a system, which is unified by necessary rules and laws, according to which it can be determined that some events *must* follow, be simultaneous with, or precede others. Thus an objective experience which can make good the title to be distinguished from mere dreaming and subjective phantasy must be more than a mere heap or congeries of sense-contents; it must be, as it were, an organic whole, in which each piece of content has its definite function and place assigned to it according to necessary rule. The very experience which Hume uses to explain away the categories presupposes them as ingredients necessary to its very constitution.

This principle of synthetic unity, and of objective unification, which is thus found to be a necessary

immanent presupposition of all experience, Kant variously calls the "Transcendental Unity of Self-consciousness," the "Synthetic Unity of Apperception" (to denote that every new content must be brought into objective relation with the object-world already present—i.e., must be apperceived), or "Consciousness in General." But this highest principle of the understanding and of human knowledge is not, so to say, directly active. The demand for unity which it represents is carried into effect in the actual world of experience by means of connecting ideas of less abstract and general nature. Just as the universal notion of judgment becomes actual only in the different kinds of judgments, so this general principle when operative in synthesising the manifold of sense assumes the form of the categories. The Synthetic Unity of Apperception is therefore the Category of Categories, or, as Kant figuratively puts it, their vehicle.* A tabulated table of these categories will give us the constituent presuppositions which render objective experience possible.

It would seem that for Kant's purpose—the valuation of the theoretic disciplines—an exact and exhaustive determination of these categories would be of the utmost importance.† That Kant did not give himself much trouble in this respect was probably due to his own subjective interests. His categories are sufficient to enable him to pass

* A. 341, 343, B. 399, 401.

† Cf. Hegel, *Encyc.*, *Werke* VI., § 42. Cf. also § 60.

judgment on Mathematics, Natural Sciences and Metaphysics—the theoretical disciplines *par excellence* of his century and those which had always occupied his attention. Being dissatisfied with the Aristotelian table of categories, because it contained members which properly belonged to sense, and was founded on no distinct principle, Kant set about rectifying these defects and deducing the forms of thought according to a definite principle. This principle he believes he has found when he draws attention to the fact that “the same function which gives unity to the different representations in a judgment, gives also unity to the mere synthesis of different representations in an intuition.” * Working then under the guidance of the old division of Judgments in Formal Logic, Kant arrived at his well-known table of categories containing four classes—Quantity, Quality, Relation, Modality—each with its three sub-classes.

Whatever defects this attempt to connect the table of categories with the division of judgments in formal logic may labour under in its further development in Kant’s hands, it has at any rate been a very fruitful idea. It brings into prominence a side of the Aristotelian Logic which had previously remained undeveloped. It calls attention rather to the “form of thought” as an objective relation of content, than to the subjective movement of thought, and so tended to

* A. 79, B. § 10. Cf. *Prolegomena*, §§ 21 [a] and [39].

establish what I may call an objective Formal Logic by the side of the Methodology, which had up to then almost entirely occupied the logicians. And it is in this way that much of what is most characteristic in the logic of the 19th century—the development of the doctrine of judgment, and in some cases the conversion of the science into a systematisation of the table of categories—can be traced back to this pregnant idea of Kant's. But his own attempt to derive the table of categories from the current forms of judgments was unfortunate, seeing that the process should rather have taken place in the opposite direction. We shall have more to say on this point in the sequel ; at present we may remark that the table of categories arrived at is naturally used by Kant as a schema in treating the various branches of philosophy which he investigates. This dogmatic belief in the possibility of giving a complete tabulation of the elements of the reason, and therefore of the formal side of knowledge, takes the place in Kant of the preceding rationalism ; whilst by limiting reason to this formal use he is able to do justice to the claims which the “sensist” philosophy represented.* Another point worthy of notice in connection with this attempted deduction is that it supplies the categories which especially interested Kant, but could not, as the state of formal logic then was, have any room for the inclusion of those of a “higher” character.

* Cf. Simmel, *Vorlesungen ueber Kant*.

We shall see lower down that a deduction of the categories much more in harmony with the whole spirit in which the critical philosophy was conceived, and with definite reference to the possibility of experience, may be gathered from a careful examination of Kant's statements in this connection.*

This is—*e.g.*, especially the case where Kant proceeds to expound systematically the fundamental principles (Grundsätze) of the understanding. Mathematics now finally establishes its claims to objective validity and reality; for it is only as space and time possess extensive, and what is presented in them intensive quantity, that the representation of the former in actual empirical consciousness is possible. Thus mathematics cannot be contradicted by experience, since the principles on which it rests are also those which render possible the presentation of space and time, and therefore of experience itself, of which space and time are the necessary conditions.† Similarly with regard to the principles of natural science. All our sensation-contents are given to us successively, but this gives us no information as to the objective order which exists

* Yet even if it be granted to us that "actual" considerations really play a more important part in determining the Kantian table of categories than this "metaphysical" deduction might suggest, still the "completeness" which he attributed to his "table" is probably largely due to this ill-fated attempt at deduction from the judgments of formal logic.

† Cf. *Axioms of Intuitions and Anticipations of Preception.*

among them. We can determine objective position in time, whether of duration, succession, or co-existence, only in an experience which presupposes certain rules as necessary to its very existence. Now these rules, which alone enable us to determine the order in time of our sensation-contents, are also those which form the presuppositions of natural science. Thus the objective temporal succession, as distinguished from dreams and subjective illusion, by which empiricism will explain these *a priori* principles, is itself possible only by their means.* The objective validity and real applicability of mathematical and natural science is therefore demonstrated.†

Within the realm of experience and of the sciences having their application in it, the categories have *constitutive* knowledge-value. But this validity, having been proved for them as forms of synthesis, we have no reason to hope for, when they are employed for purposes other than synthesising the "given of sense." Yet this is what the pseudo-science of metaphysics proposes to do. Knowledge may, as we have already seen, be said to be the product of two opposing tendencies in our way of thinking—one leading to unification and completeness, the other to the acquirement of ever new matter, which prevents

* Cf. *Analogies of Experience*.

† In *The Postulates of Empiric Thought in General*, Kant investigates the conditions of real "possibility," "existence," and "necessity."

this unification being perfected. But though sense and understanding stand thus opposed, it is only by the union of both that knowledge is possible.* Metaphysics, however, looks only at the one side—that tending to absolute unity and completeness.† It thus sets up for itself three ideas—the Soul, the World as a complete whole, and God; but failing to notice that these have validity only as ideals, problems, or guiding principles in our effort to systematise, or keep systematising, the given of sense, it abstracts altogether from the latter, and forgetting that knowledge requires not only the synthesising principle, but also the matter to be synthesised, it hypostatise its ideas. Thus are established the pseudo-sciences of Rational Psychology, Rational Cosmology, and Rational or Natural Theology. In dealing with Rational Cosmology, Kant shows most clearly how metaphysics is due to the over-emphasis of one or other of the above-mentioned tendencies

* Thus even mathematical judgments are *in themselves* not knowledge. They derive their reality from the circumstance that time and space are the forms of all perception. Cf. B. 147, A. 156, B. 195, A. 157, B. 196, A. 160, B. 199, A. 165, B. 206, A. 224, B. 271, A. 239 (end), B. 299.

† This seems to be Kant's *expressed* opinion, though it is clear that we become quite as metaphysical if we fix our attention entirely on the other side, and set up a sensational atomism as the ultimate truth of things. It was natural, however, for Kant, owing to the evolution of his own thought, in this place to dwell almost exclusively on the rationalistic metaphysics, especially as he had already refuted empiricism. In the Antinomy doctrine both sides seem to be borne in mind.

latent in experience.* The Reason makes demands which sense is unable to fulfil; hence arise the Antinomies of the Pure Reason. Thus metaphysics is shown to be a natural illusion of the human mind. Theoretically, we can never arrive at a knowledge of the Soul, the "World" (as an absolute whole), and God. But their existence cannot therefore be denied, because a knowledge of them may be possible to beings whose condition of intuition is not, like ours, sensuous, but intellectual. But of the possibility of this intellectual intuition or of its meaning we have no knowledge. For us they remain, as far as the theoretical reason is concerned, mere negative "limiting notions" and ideals or problems.

But since our relation to things is not only that of knower to object known, but also of agent to purpose to be realised, Reason has another, besides a theoretical, function. It has not merely to be a guiding principle of the Understanding in arranging "the given of sense" in space and time according to the categories, but must also prescribe objectively valid aims for the will. The *method* here adopted by Kant is in essential particulars the

* Kant has not developed the Antinomy doctrine in Theology and Psychology as in Cosmology, though it is easy to see that it has a similar application in these spheres. We might have in Psychology, for instance, as thesis: "The soul is a simple, self-identical spiritual substance;" and as Antithesis, "The soul is a mere compound and congeries of sensations" (i.e., Atomistic Empirical Psychology made into a metaphysics). But see previous note.

same as that of the "Critique of Pure Reason." He investigates what are the conditions and pre-suppositions of a moral law which can lay claim to objectivity—i.e., to hold good not only for me the given individual, at the moment, according to my present empirical desires, but for all and at all times. He finds that morality involves as an inherent presupposition that actions be done out of pure reverence for the law as such; "duty for duty's sake!" Objects and actions are determined no longer according to the iron-bound law of mechanical causation, but according to considerations of value and worth; we are now in the world of freedom, where the former blind mechanism, which met us in the theoretical sphere, has no play or meaning. The pure category of "Ground and Consequent" still finds application, not, however, any longer in order to connect things into an order in time, but to determine the interdependence of ends and values, questions in which considerations of time have no meaning. Man in his moral capacity is an end in himself, and in so far as he treats mankind in himself and in others as an end, never as a means, and thus forms a member of a kingdom of similar absolute ends, he is an object of unconditioned worth. But his actions have to be carried out in the actual world of time and space, and so "freedom" in the sense of the possibility of reverence for the law being one of the motives which, the law of causality in its fulness remaining intact, influence him,

becomes a postulate of morality.* Duty for duty's sake is not, however, the *summum bonum*. Happiness is likewise an element. As, however, the connection between these two elements is not analytical, in the sense that action for duty's sake means happiness, we must presuppose the existence of God and the Immortality of the Soul. Thus the three Ideas of the Reason, which met us in the criticism of metaphysics, make their appearance again, if in somewhat attenuated form, as Immortality, Freedom, and the Existence of God. They are now postulates of the practical reason and firmly established objects of belief.

The result of the two Critiques is to leave the worlds of Nature and of Freedom not so much opponents as strangers. They cannot contradict or agree with each other, for the simple reason that they speak different languages. In the one the position of every object and action in space and time is determined according to definite rules, in the other its worth is assigned it. The task of mediation between the two realms is undertaken in the Critique of Judgment, where the idea of end is shown to have application to nature.

We judge things immediately given to be beautiful or ugly, and claim objective validity for our judgment. This reveals an unsuspected pur-

* This would seem to be the essence of Kant's doctrine of Freedom though it is probable that he interpreted it in a more metaphysical fashion. Cf. Windelband, *Prælectionen*.

posefulness between our Imagination and Understanding. Similarly in the objective sphere we must call in the idea of "end" in order to explain life, since mechanism does not suffice. This, however, does not mean that we are to substitute the teleological for the mechanical categories in explaining events which take place in the organism. In science we must push the mechanical explanation to the utmost, as it alone can give us knowledge, though we must recognise that it is insufficient to explain the origin of life. The purposefulness is, however, subjective; it is a *necessary point of view* for our understanding, but perhaps not for a higher.

As regards nature as a whole, although we can enunciate certain *à priori* laws which must hold good in the objective world, if it is to be known by us, yet we cannot from these deduce the particular laws. It is a happy, and by no means a demonstrable, result that the matter of our sensations allows itself to be synthesised according to the *à priori* rules of our minds—a result which we can only explain by assuming that they are both the creation of one supreme intelligence. The idea of end, applied to nature and history as a whole, means that we are to regard them as realising, in their development, what is alone of absolute worth—the moral ideal. This we can also conceive as possible only if we regard them as the product of a supreme moral governor and creator of the Universe, who produces the matter as well as the

form simultaneously—i.e., whose intuition is intellectual. Thus in the positive idea of Intellectual Intuition the three Critiques run together.*

In comparison with the Intellectual Intuition and with the world of freedom, our knowledge, which has to confine itself to arranging the given of sense in its place in space and time according to universal laws, must be described as limited to phenomena, and unable to reach the Ding-an-sich. Up to this I have purposely refrained, as far as possible, from referring to the character of phenomenalism which Kant ascribes to all theoretical knowledge, as I believe such a course to be necessary to prevent misunderstanding of the critical philosophy.† Kant himself adopts another course, and introduces the distinction between phenomena and noumena at the very beginning of his enquiries, in the transcendental Aesthetic, and continues to

* Windelband, *Lehrbuch der Geschichte der Philosophie*. But this idea of "Intellectual Intuition" still remains subjective.

† Cf. Hegel, *Encyc.*, § 60. "No one knows or even feels that anything is a limit or defect until he is at the same time above and beyond it." The reason of the introduction of the distinction at this early stage is probably due to a complexity of motives. We may regard the Aesthetic, as far as language is concerned, as more or less a reprint of the German revision of the "Inaugural Dissertation" which Kant began preparing after the publication of the latter (Cf. Letter to M. Herz, 1772). From the point of view of this treatise of 1770, when Kant had not as yet reached the critical method, the introduction of the distinction here is quite intelligible. There would also be a natural tendency to anticipate an important aspect of his doctrine, which could,

refer to it throughout his subsequent investigations. This, however, seems to me all too previous, and has misled his followers, both supporters and opponents, if it has not at times somewhat confused even Kant himself. Taken with the psychological language which, using the current philosophical terminology of his time, he employs to give expression to his epistemological theories, it has led to confounding the Kantian Ding-an-sich and phenomenalism with what I may call their psychological counterparts of ordinary "hypothetic realism." * And yet the two must be carefully distinguished, as Kant devotes a special section to the refutation of the latter. † The psychological Ding-an-sich owes its origin to what Professor James ‡ calls the "psychologist's fallacy"—i.e., "the confusion of his own standpoint with that of the mental fact about which he is making his report."

however, only find its complete development and justification at a much later stage. Seeing his problem as a whole, Kant might think that an anticipation in this respect would be helpful rather than otherwise to his readers, who, however, were unhappily not in so fortunate a position in this respect as he himself was. Then again in the Aesthetic he was anxious to show how the synthetical judgments *a priori* of mathematics were possible, and here as elsewhere, owing to the already mentioned psychologistic prejudice which forms his starting point, he purchases a priority and necessity at the price of phenomenalism and subjectivity.

* Hamilton's (Edition of *Reid's Works*, note) terminology.

† "Refutation of Idealism," in 2nd Edition, and "Fourth Paralogism," in the 1st.

‡ *Principles of Psychology*, Vol. I., pp. 196-7.

The psychologist stands, as it were, outside the cognitive mental state, and fancies that the same problems arise for it as for him in investigating it. If we keep within the mental fact or facts the course of development is a gradual differentiation of various objects in space and time, and the final *introjection* of the mental states into one of the given objects. The psychological fallacy, however, leads to the process being represented as taking place in the reverse direction. For the psychologist both the idea and its object are external to himself and to each other, and when he confuses the two standpoints the idea, instead of knowing the object, immediately becomes a *tertium quid* between it and the subject, and the problem arises how the world can be known. The answer given is that it is known not immediately, but through an inference to the cause of our sensations; the ideas are "*projected*." This is a point of view which Kant combats with great energy, insisting on the immediate character of perception,* though his language is often such as to make misinterpretation almost inevitable.†

* "Refutation of Idealism," in 2nd Edition, and "Fourth Paralogism," in the 1st.

† The character which the "Things-in-themselves" afterwards reveal when they come to be considered bear out this interpretation—e.g., the Soul, the World (in sense of a whole), God, Freedom, &c. Yet though Kant escapes the "psychologist's fallacy" in its most glaring form, still it seems to me that his subjectivism, and perhaps, indeed, the character of the critical method is due to a subtler form of the same fallacy. Cf. *infra*.

2. CRITICAL REMARKS ON KANT'S PROCEDURE AND TRANSITION TO HEGEL.

We shall not here enquire into the ultimate value of the critical method, nor whether it is the only, or even a possible standpoint to occupy. Let us instead glance for a few moments at some points in Kant's elaboration of his general critical idea. The doubt must arise as to whether it is possible distinctly and explicitly to formulate and bring to the full light of consciousness the pre-suppositions and principles, which an examination of experience shows to have been unconsciously active in its production. The problem arises at two distinct stages—first in the case of the pure intuitions, and then of the categories and the principles derived from them. Even granted that space and time are the *a priori* conditions of all perception, does it follow from this that this space is one, homogeneous, and identical in its properties with that which lies at the basis of Euclidean geometry? * Again, granted that experience is possible only if the given of sense is bound together according to certain rules of the Understanding, yet seeing that this synthesis takes place in “the deepest depths of the soul” through the agency of “the blindly-acting productive imagination,” † is it possible for us to express these working and

* Cf. *infra*, p. 111.

† Cf. A. 78 (first par.), B. 103 (last par.).

synthesising principles in abstract formulæ? * Kant thought to demonstrate these principles *a priori*. He assumes that the reason or synthesising function in experience is a systematic unity, and that we can draw up a table of its principles, "which should be complete and entirely cover the whole field of the Understanding."† He holds, therefore, that the "Synthetic Unity of Apperception," which alone renders experience possible, must always be expressed through the same limited and definite number of categories, and that these can be deduced from it so as to leave no link wanting in the system. This belief in the stability and incapacity for development in the Understanding's contribution to experience is probably due, partly to the predispositions with which Kant approached his task—viz., a conviction (the result of the whole course of his long precritical philosophical development) of the reality and validity of mathematics and mechanics, and of the impossibility of metaphysics, as a form of knowledge;‡ partly perhaps to his attempted deduction of the categories from the current division of judgment in Formal Logic. We thus find him dogmatically and on *a priori* grounds rejecting the category of

* The question is as to how far the consciously formulated postulates of natural science can lay claim to that character of necessity possessed by those unconsciously working categories to whose agency experience is due.

† A. 64, B. 89. Cf. A. xiii., xiv., xx., begin. B. xxiii., A. 11, B. 23, &c., &c.

‡ This is most clearly shown in the *Prolegomena*.

Final Cause as a theoretical principle.* Even if we grant that among consciously applied postulates those of mechanism have been principally, or even exclusively, successful in reducing the manifold to a unity of knowledge, yet I do not think it can be held that Kant has shown this to be a necessity of Reason, or to spring from the synthetic unity of apperception as such.† He believed in the possibility of setting up a Critique of the Reason once and for all, apparently not adverting to the fact that all such criticism must rest finally on the state of contemporary knowledge, which is naturally always imperfect and ever in a state of development.‡

These appear to me to be some dogmatic pre-suppositions which permeate the critical philo-

* As Lotze remarks ("Metaphysics" Introduction), we can *a priori* give no reason why the "manifold" should be more amenable to unification through the category of cause rather than through that of "end."

† Experience is probably unified by categories which are very much tinged with anthropomorphism. Thus the axioms of natural science would be very much purer and more abstract than those which are actually operative in the unification of experience. It may be said that the mechanical categories are alone capable of producing complete unity, and, therefore, are alone justified. But I doubt that Kant has satisfactorily shown this, and even if he had, the necessity of this complete unity, even as an ideal, remains to be demonstrated.

‡ Cf. Höfding, *History of Philosophy*, II. In the evolution of knowledge must not the categories which now, half-hidden or latent, form the binding strands of experience, perhaps, give place to others, which shall perform a similar function? Cf. Hegel III., p. 12. Ll. 14-21.

sophy. But even abstracting from these there were some other features which must ere long prove unsatisfactory to any one who had accepted Kant's fundamental standpoint, certain weak points within the system itself calling for reform. A want of articulation in detail in the different parts, as well as in the general characteristic features, becomes at once apparent. Owing partly perhaps to Kant's method of deriving his table of categories, they present the appearance of standing in a mere outward relation to each other; being placed beside one another, but without an inner connection being established.* He indeed holds that they are the only possible forms which the Synthetic Unity of Apperception can assume when engaged in synthesising the "given of sense." But his attempted deduction is, as already remarked, rather a reversal of the true position, and the categories remain as little inwardly connected with "their vehicle" as with each other. The same, perhaps, to a still more marked degree, holds good of the relations subsisting between the several greater divisions of the Kantian philosophy. The inner connection between the Aesthetic and the Analytic in the "Critique of Pure Reason" is not clearly presented, whilst Sense and Understanding seem at best to be in a state of armed neutrality.†

* It will subsequently be shown that in the Critique suggestions of such an inner connection are not wanting.

† Kant has been blamed for the sharp distinction which he draws between sense and understanding. This criticism seems to

Even with the help of the "Critique of Judgment" there is no clearly graduated transition from the realm of Nature and Necessity to that of Ends and Freedom. Everywhere disconnection, sharp opposition and contrast seems to reign supreme. In closer relation with this than might at first appear is the phenomenalism which Kant ascribes to all theoretical knowledge.* This subjectivism, interpreted, as Kant's language often gave occasion enough for, in a psychological manner, could not fail to give umbrage. The doubtful and seemingly contradictory position of the Ding-an-sich especially invited attack. It seemed to stand in the same relation to the world of experience as—*e.g.*, the waves of ether, or, farther back still, their exciting cause, stand to our sensations of colour, and this though all transcendent use of the category of cause had been denied. Thus it became the task of Kant's followers to explain the Ding-an-sich, so understood, out of the critical philosophy, and so in this respect at least to give more adequate expression to Kant's real meaning.

me to spring either from metaphysical considerations or from a standpoint which would leave out of sight the imperfections and limitations of human knowledge. For Kant, therefore, it was impossible to assume that unity of sense and understanding which must ever remain for him an "ideal" or problem. That, however, he inwardly believed in such a unity is suggested by the hint he throws out (A., p. 15) that perhaps they may spring from one root, as well as by the whole tone of the "Critique of Judgment."

* Cf. *infra*.

3. HEGEL'S STANDPOINT AND METHOD.

As far as the Kantian philosophy was concerned we may therefore describe the task which lay before Hegel as follows:—Expand* and systematise† the Kantian table of categories, so that their mutual relations and positions shall be clearly defined and their necessity proved, and at the same time get rid of the subjectivism and its appenage, the Ding-an-sich. His method of carrying this out was, naturally, influenced by his individuality and the attitude he adopted towards the earlier philosophical systems as well as towards the other branches of speculation. We cannot here enter into a discussion of this influence, it being sufficient to remark, that as mathematics, natural science, and moral philosophy played no small rôle in determining the results and some of the details of the method of the “critical” philosophy, so for Hegel the idea of concrete development, looked at especially on its historical side, was a very important *motif*. For him the real, the full concrete which is alone true, is the absolute Mind or Spirit as the principle of evolution.‡ He rejects the individualistic and psychological starting point of Kant, and thus rids himself not only of sub-

* Cf. *Encyc.*, § 58.

† Cf. *Encyc.*, § 41, 42. *Werke* III., pp. 31 (2nd par), 32 (2nd par).

‡ Cf. *Encyc.*, § 13, 14.

jectivism, but of the necessity of answering many of the questions which were of first importance for his predecessor. The notion of the individual, as well as the psychological standpoint we are now referring to, are derivative and secondary, and instead of being ultimate, as Kant seems, implicitly at least, to have thought, themselves stand in need of explanation and deduction. They cannot therefore (as happened in the case of Kant) be allowed to determine the character of our philosophical speculations. Kant had to find out the logically immanent presuppositions of an experience, the matter of which is only gradually given, and which can never reach completion, just as ordinary logic, treated as a methodology, strives to formulate the rules according to which we must proceed in consciously reducing the manifold of sense to unity. Rejecting the psychological prejudices which still cling to Kant, Hegel's task is to discover the thought-forms immanent in reality. The system of categories in its entirety presents the very nature of mind—not, however, of mind as separate and standing apart from reality, but as constituting its very innermost essence. "Absolute knowledge is the Truth of all ways of consciousness, because . . . it is only in the case of absolute knowledge that the separation of the object and the certainty of self is entirely put an end to, and that truth and this certainty are equated. Thus pure science presupposes liberation from the antithesis of conscious-

ness. It contains thought in so far as this is the matter-in-itself, and the matter or thing-in-itself in so far as this is pure thought. As science truth is the pure self-developing selfconsciousness, and has the marks of the Self—viz., that Being in and for itself is conscious notion, whilst the notion as such is Being in and for itself. This objective thought is, then, the content of pure science. Pure science is therefore by no means merely formal, nor does it dispense with the matter necessary for real and true knowledge. On the contrary, its content alone is the fully . . . true. Logic is consequently to be looked upon as the system of pure reason, as the realm of pure thought. This realm is Truth as she appears without a veil, in and for herself. The expression might therefore be made use of, that this content is the presentation of God as He is in His eternal essence, before the creation of nature and of finite spirit.” *

“To speak of thought or objective thought as the heart and soul of the world may seem to be ascribing consciousness to the things of nature. We feel a certain repugnance against making thought the inward function of things, especially as we speak of thought as marking the divergence of man from nature. It would be necessary, therefore, if we use the term thought at all, to speak of nature as the system of unconscious thought, or, to use Schelling’s expression, a

* *Werke* III., p. 35. Cf. Pp. 53–54. *Wenn Andere Kantianer . . . nehmen ist*, p. 28 (2nd par.).

petrified intelligence. And in order to prevent misconception, thought-form or thought-type should be substituted for the ambiguous term thought.* From what has been said the principles of logic are to be sought in a system of thought-types or fundamental categories, in which the opposition between subjective and objective, in its usual sense, vanishes. The signification attached to thought and its characteristic forms may be illustrated by the ancient saying that '*νοῦς* governs the world,' or by our own phrase that 'Reason is in the world'; which means that Reason is the soul of the world it inhabits, its immanent principle, its most proper and inward nature, its universal. . . . If thought is the constitutive substance of external things, it is also the universal substance of what is spiritual. In all human perception thought is present; so, too, thought is the universal in all acts of conception and recollection; in short, in every mental activity—in willing, wishing, and the like. All these faculties are only further specialisations of thought. When it is presented in this light, thought has a different part to play from what it has if we speak of a faculty of thought—one among a crowd of other faculties, such as perception, conception, and will, with which it stands on the same level."†

Owing to his psychological starting-point, the "transcendental deduction" of the categories

* Cf. *supra*, p. 5.

† *Encyc.*, § 24, note 1.

formed the kernel of the Kantian logic. "The Critical Philosophy proceeds to test the value of the categories employed in metaphysic as well as in other sciences and in ordinary conception. This scrutiny is not, however, directed to the content of the categories, nor does it enquire into the exact relation they bear to one another, but simply considers them as effected by the contrast between subjective and objective." * For Hegel, as already suggested, these considerations lose their importance, and in their stead the metaphysical deduction of the categories, the investigation of them in themselves and for their own sake, a task only very perfunctorily performed by Kant, assumes the foremost place. "*Logic then coincides with metaphysics, the science of things set and held in thoughts*—thoughts accredited able to express the essential reality of things." † It becomes the centre of his whole system, the philosophies of nature and of mind, dealing only with the particular expressions the pure categories receive in these spheres. ‡

* *Encyc.*, § 41. Cf. § 60, note 1, and *Werke* III., pp. 32 (2nd par.), 54 (2nd par.), 55 (end of 1st par.).

† Cf. *Encyc.*, § 24. Cf. *Werke* III., pp. 6 (3rd line of 2nd par.), 54 (last three lines of page).

‡ *Encyc.*, 24, Zusatz, 2. "If in pursuance of the foregoing remarks we consider Logic to be the system of the pure types of thought, we find that the other philosophical sciences, the Philosophy of Nature and the Philosophy of Mind, take the place, as it were, of an Applied Logic, and that Logic is the soul that animates them both. Their problem in that case is only to recognise the logical forms under the shapes they assume in

"Logio is the science of the *pure idea*; pure that is because the idea is in the abstract medium of *thought*. . . . It may be defined as the science of thought, and of its laws and characteristic forms. But thought, as thought, constitutes only the general medium, or qualifying circumstance, which renders the Idea distinctively logical. If we identify Idea with thought, thought must not be taken in the sense of method or form, but in the sense of the self-developing totality of its laws and peculiar terms. These laws are the work of thought itself, and not a fact which it finds and must submit to. . . . This science is the thinking of thinking."* For ordinary logic† the forms of thought were more or less useful helps which the individual mind could use to manipulate its thought-contents, so as, starting from immediately given facts, or granted premises, to arrive at some other thought-complex, whose truth would be thereby guaranteed. For Hegel, on the contrary, they do not stand in this merely external relation to Reality, but form its real essence.‡

The categories, whose system logic is, though Nature and Mind—shapes which are only a particular mode of expression for the forms of pure thought . . . Logic is the all-animating spirit of all the sciences, and its categories the spiritual hierarchy. They are the heart and centre of things." Cf. § 18.

* *Encyc.*, § 19.

† Cf. *Encyc.*, § 20, Lecture note. § 42 (end of 2nd par.). *Werke* III., p. 20 (1st par., line 8 to end). He frequently announces that there is to be a complete change in the conception of the science.

‡ Cf. *Werke* III., pp. 15–21, when he discusses *in extenso* the external character attributed to the forms of thought.

they are the very heart and reality of things, both natural and spiritual, and constitute the distinctively human in all our perceptions, conceptions, desires and feelings, are yet, as a rule, not objects of clear knowledge. They are, as it were, deposited in language,* where, at first unnoticed, they are used, and only gradually come to be known. Similarly the empirical sciences help to bring them to light,† whilst the advance of thought shown in the history of philosophy is to ever higher categories or more adequate points of view. Consciously to formulate and systematise these thought-forms or thought-types is the business of logic.‡ The scientific Understanding grasps every thought and notion in its full precision, and leaves nothing vague and indefinite. Science must employ its categories with the utmost rigour and definiteness—in this alone lies the possibility of progress.§ But though within its own particular sphere each category has absolute validity, its own value and that of the science founded on it must be proved and estimated. To determine the position which any given category holds in the system of Reason, and so to value the scientific

* Cf. *Werke* III., p. 11.

† *Ibid.*, p. 12.

‡ *Ibid.*, p. 18. "To bring to consciousness this logical nature which animates the spirit and operates and works in it is our task." Cf. p. 13 (2nd par.), and p. 21 (end of 1st par.).

§ Cf. *Encyc.*, § 80, with note, and § 89.

standpoint or *Weltanschauung* * which it represents, is what Hegel hopes for from his logic. But this is not all that it will do ; it will also form the complete and truest expression for the absolute Reality—and this is indeed its main purpose. “ Logic is the absolute form of truth and another name for the very truth itself,” † and the advance from the lower to the higher categories leads to ever more adequate and valid definitions of the Absolute.

Thus, since only the reasonable can lay claim to actuality, ‡ every category which will assert its reality must be prepared to show its necessity in Reason. The system of categories as an expression of the Absolute essence, which pours through all things, exhibits an organic completeness. § If any category be taken from its place in this system it no longer continues to be what it was, but bears the traces, the wounds, as it were, of its forcible removal. || Or, less figuratively, since it has its truth only as a part of one systematic whole, if it is considered alone, regarded as self-sufficient

* The “ Logic ” gives not only a valuation of the different scientific disciplines, but also a standard to estimate the significance of the various systems which philosophic thought, in the course of its development, has elaborated.

† *Encyc.*, § 19. Cf. § 85, with note. *Werke* III., p. 69 (first four lines). Cf. also *Encyc.*, § 19, note 2.

‡ “ What is reasonable is actual, and what is actual is reasonable,” *Encyc.*, § 6 (from Preface to “ Phil. of Law ”).

§ Cf. *Encyc.*, §§ 9, 14.

|| *Ibid.*, § 89.

and preserved in this abstractness, it will fall into contradictions with itself, and develop into its opposite. This opposite is quite as one-sided when taken in isolation and considered as self-sufficient apart from the first, and so exhibits a similar inherent self-contradiction. The truth of both of these opposed categories is not to be found in either held in forcible separation from the other, but in their unity. Thus we see that the essence of the dialectical method hangs closely together with the idea of absolute science or knowledge. Let us consider this method and what is involved in it a little more closely.

“Unless it is a system, philosophy is not a scientific production. Apart from their interdependence and organic union the truths of philosophy are valueless, and must then be treated as baseless hypotheses or personal convictions.”* A list of the categories, merely empirically put together, as happened in the cases of Aristotle, and, notwithstanding his strictures on such a mode of procedure, of Kant, cannot satisfy our requirements. For the haphazard character of such classifications we must substitute a “deduction” according to method. But we cannot use the methods of any of the subordinate sciences for this purpose, since they find their justification (as well as the limits of their application) within the body of the logic itself.†

* *Encyc.*, § 14.

† *Cf. Werke III.*, pp. 6 and 7.

"It can only be the nature of the content which develops itself in scientific knowledge, and it is at the same time this self-reflection of the content, which itself first posits and creates its determination." * The method of deduction, then, of the pure forms of thought rests on their own nature, and the possibility of advance depends on the fact that any of them held apart from the others in enforced abstraction falls into self-contradiction and reveals itself as involving its opposite or negative. But this negative which thus results is not merely negative, pure nothing, but is quite as positive as the member from which it sprang—it is in fact its "contrary." † Thus both the thesis and the antithesis, each held in abstract isolation from the other, fall into contradiction with themselves; therefore neither can

* *Werke* III., p. 6. Cf. *Encyc.*, § 243.

† Cf. *Werke* III., p. 41. "In order to secure a proper scientific advance, the important thing . . . is knowledge of the logical sentence that the negative is positive as much as it is negative, or that the self contradiction resolves itself not into zero, into mere abstract nothingness, but essentially into negation of its *particular* content, or that such negation is not simple, mere negation, but the negation of *something definite*, which had gone into solution, and so is *definite* negation, and, consequently, that in the result that is contained out of which the result flowed. . . . Since that which results, the negation, is *definite* negation it possesses a content. It is a new notion, but a higher and richer notion than its predecessor, since it has grown richer by the value of the negation or contrary of its predecessor, and so contains this latter but more than it, and so is the unity of it and its contrary."

possess the truth, which is rather to be found in the synthesis of both. This unity is, however, no mere abstract unity, in which all trace of the difference between the opposing members from which it springs is lost, nor is it a mere return to the first position. The distinction between thesis and antithesis is preserved, but both lose their independence as self-sufficient categories and become mere *moments* in the synthesis.* But this synthesis itself, taken, as its "moments" were previously, in its immediacy, and claiming to be self-sufficient, exhibits the same characteristics, betrays a similar inherent self-contradiction. And so the process repeats itself. Thus in the advance of the dialectical process each category will in turn be superseded, not, however, so as to be entirely lost, but to be preserved as a "moment" in the higher and richer category, which it has called forth, or in Hegel's technical language, "mediated." The category "does not all die"; though suppressed, it is at the same time stored up, or, as Hegel expresses it, availing himself of the double meaning of the word, it is "aufgehoben." † The process is, therefore, from the abstract universal through difference and particularity to the concrete synthetic universal. ‡ We start with the thought in its "immediacy,"

* *Werke* III., 110, note. *Encyc.*, § 96, note (towards end).

† *Aufheben* means—(1) to preserve; (2) to abolish.

‡ Sterret, *Ethics of Hegel*, p. 9. Cf. *Werke* III., p. 7. *Der Verstand bestimmt . . . mitbestimmt.*"

which means "an abstract reference to self—that is, an abstract identity or abstract universality." * We then see that so taken in itself it involves its negative—but a negative which is equally abstract—"the abstract negation." The next step is the synthesis of these two contraries, in which both are absorbed, but not lost—the Negation of the Negation, "the absolute negation." This "absolute negation" is thus seemingly a restoration (*Wiederherstellung*) of the thesis, of the simple relation or reference to self; but this is not so, as the process by which the result has been reached is preserved in it. Instead of the original immediate we have now the "its mediation with itself." †

We have thus before us the idea of a system which, starting from the emptiest, most abstract and immediate of the categories, advances gradually through inner necessity of reason, till at last the highest, fullest, and most concrete category, one which is in unity with itself is reached. This is the Absolute Idea, *νόησις νοήσεως*, Absolute Self-consciousness, in which all the categories which have been successively found wanting are preserved, but only as "moments." The advance consists, as we have seen, in the alternate denial and recasting of each stage, which in undergoing this transformation leads to that immediately

* *Encyc.*, 74, note.

† *Cf. Werke* III., pp. 120, 121.

higher. The starting point for this development is found in the emptiest of all categories, pure, mere Being, mere "is," Being empty of all other content and of all determination. But as such it is plainly in no way different from "nothing," mere "not," which is the same emptiness of all definite content. A distinction between "is" and "is not" is *meant*, but it is not *expressed*.^{*} Being passes into Nothing, and this back again into Being. The attempt to hold them apart as independent and isolated categories has failed. Their truth is to be found in their unity, in that which contains in it both Being and Nothing, and to this category Hegel gives the name of Becoming, which, when expressed with more immediacy, is Being-there-and-then, Being-determinate [Daseyn].[†] In this "Being," which forms the starting-point of the Hegelian Logic, we meet again the Kantian "Synthetic Unity of Apperception," stripped, however, of the subjective clothing which Kant had left adhering to it. It is the mere idea of synthesis in general without any indication how (*i.e.*, in what particular form) this synthesis is to be realised. And as the Synthetic Unity of Apperception was not, so to speak, immediately operative, becoming so only under the form of the particular categories, so the Hegelian Being *means* to express a synthesis, but taken in its purity is

^{*} Cf. *Werke* III., pp. 59, *seq.* *Encyc.*, §§ 84, *seq.*

[†] *Encyc.*, § 87 (end of p. 2), and begin. of note.

unable to do so, is in fact capable of *expressing* no more than "is not." *

It is not possible here to follow Hegel through the whole course of the self-development of the pure thought in its passage from this beginning, in which something is meant rather than expressed, up to the full concreteness and completeness of the Absolute Idea. We have already seen that it was this Absolute Idea which gives, as it were, its developing power to the whole process. We finally reach the Absolute, because it was really there throughout, was implicit in our starting point, and forms, indeed, in its full concreteness the presupposition of the "Method." †

We are thus presented with, as it were, a graduated and expanded scale of categories, ranging from the emptiest and most abstract to the fullest and most concrete. In its compass it embraces not only those contained in Kant's table of theoretical categories, but also the ideas of the Critiques of the Practical Reason and of the

* Cf. *Critique*, B. § 19. "A judgment is nothing but the mode of bringing given cognitions under the objective unity of apperception. This is plain from our use of the term of relation *is* in judgments, in order to distinguish the objective unity of given representations from the subjective unity. For this term indicates the relation of these representations to the original apperception, and also their necessary unity." We must, of course, bear in mind the distinction due to Kant's more subjective standpoint. Cf. Also B. 404, 405. *Meiklejohn*, 239, 240. Cf. *Encyc.*, § 20 (towards end), and *Werke* III., pp. 53-54, 71, 72.

† Cf. *Werke* III., p. 65.

Judgment, finding its climax in a notion not very unlike the "Intellectual Intuition"—a mere "Idea" for Kant, and an expression of the highest actuality for Hegel. The scale of categories is likewise a scale of values—i.e., the value and validity of each category (and consequently, also, the discipline and *Weltanschauung* it represents) is determined by its position in the scale; determined, however, not in such a way as to be definitely and immediately condemned as being false, or even phenomenal, or justified as possessing the full measure of truth. This "either-or" manner of valuation does not exist for Hegel. On the contrary each is seen to possess so much truth in that it is a representation of the Absolute, but so much falsehood in that being only an inadequate representation—how inadequate is determined by its position in the scale—it would put itself forward as a complete expression of the Real.

Moreover, whereas Kant determines the validity and the limits of application of his categories by an appeal to the possibility of experience, Hegel's one criterion is Pure Reason. In this power, which he attributes to pure thought, of being able, and indeed alone able* to reach the truth of things, he resembles the earlier rationalists and meta-

* Cf. *Encyc.*, § 19, note 2 (end of 1st par.), "thought, far from being mere thought, is the highest and indeed the sole mode of apprehending the absolute."

physicians.* But whilst they sought *another* world *beyond* that of sense, which was to be the object of pure knowledge, with him the real, the Absolute is immanent in the world before us. If he holds that "the world of sense" does not adequately reveal the Real, which is open to thought alone, yet he sets up no "*jenseits*," no "Other-world." "Common fancy puts the Absolute far away in a world beyond. The Absolute is rather directly before us, so present that so long as we think, we must, though without express consciousness of it, always carry it with us, and always use it."† "The rise of Empiricism was due to the need of concrete contents and a firm footing—needs which the abstract metaphysic of the Understanding failed to satisfy."‡ "In Empiricism lay the great principle that whatever is true must be in the actual world and present to sensation. . . . The everyday world which is here and now was a good exchange for the futile other world—for the mirages and the chimeras of the abstract understanding. The external world is the truth if we could but know it, for the truth is actual and must exist. The infinite principle, the self-centred truth, therefore, is in the world for reason to discover; though it exists in an individual and sensible shape, and not

* Cf. *Encyc.*, § 27.

† *Ibid.*, § 24, 2.

‡ § 37 note.

in its truth.”* “Thought (and the universal) is not the mere opposite of sense; it lets nothing escape it, but, outflanking its other, is at once that other and itself.”† If thought grasps at the universal in things it is not the mere universal as over against the particular, and as such itself reduced to a particular,‡—the abstract universal of the understanding,§—but the real concrete universal “which includes in it everything.”||

But if he thus unhesitatingly puts aside the claims of the abstract understanding, he is no less decided in dealing with the equally pronounced

* § 38, and note. Cf. § 6. “Philosophy should understand that its content is no other than *actuality*, that core of truth which originally produced and producing itself within the precincts of the mental life has become the *world*, the inward and outward world, of consciousness. At first we became aware of these contents in what we call experience. But even experience . . . distinguishes the mere appearance . . . from what in itself really deserves the name of actuality. . . . It may be held to be the final and highest aim of philosophic science to bring about through the knowledge of this harmony [between Experience and Philosophy] a reconciliation of the self-conscious reason with the reason which is in the world—in other words, with actuality.” Also § 7. “This principle of Experience carries with it the unspeakably important condition that, in order to accept and believe any fact, we must be in contact with it; or, in more exact terms, we must find the fact united and combined with the certainty of our own selves.” Cf. §§ 8 and 12. “Experience is the real author of *growth* and *advance* in Philosophy.”

† *Ibid.*, § 20.

‡ Cf. § 13.

§ Cf. §§ 12 and 80.

|| § 24, note 1. Cf. §§ 55, 56, on Kant's *Intellectual Intuition*.

abstractions of Empiricism. The particular of sense has still less claim to validity for knowledge than the abstract universal of the Understanding. Truth is to be found in the full concrete, but Empiricism kills this living concrete and consequently truth also.* Both Empiricism and Rationalism must rest satisfied with being reduced to being mere moments in a higher knowledge, which preserves them both in a living unity. Sense perception has the truth implicit in it, but implicit for *thought* only, whilst at its face value it is error and delusion, altogether void of truth.† He thus agrees with Kant in regarding sense-knowledge as merely phenomenal. “The view that the objects of immediate consciousness, which constitute the body of experience, are mere appearance (phenomena), was another important result of the Kantian philosophy. Common Sense, that mixture of sense and understanding, believes the objects of which it has knowledge to be severally independent and self-supporting; and when it becomes evident that they tend towards and limit one another, the interdependence of one upon another is reckoned something foreign to them and to their true nature. The very opposite is the truth, the things immediately known are mere appearances—in other words, the ground of their being is not in themselves, but in something else.” ‡

* Cf. *Ibid.*, § 38, note.

† Cf. *Ibid.*, § 78 (3).

‡ *Ibid.*, § 45, note.

Thus the things of sense-perception, in order to reveal the truth which is implicit in them, must undergo transformation, must be negated ; and this is the work of thought. They must be stripped of that mutual externality and unconnectedness which characterises them as objects of sense perception. "Thought and thought alone has eyes for the essence, substance, universal power, and ultimate design of the world," * and to arrive at truth we must *think* the data of sense. But we must not rest satisfied with the mere limited thinking of the understanding, which determines its conceptions and holds fast by these determinations, so that "isolation and individuality still remain the characteristics of conception." † "If the thought-forms are vitiated by a fixed antithesis—i.e., if they are only of a finite character, they are unsuitable for the self-centred universe of truth, and truth can find no adequate receptacle in thought." ‡ Thus neither sense-perception nor its product when wrought over by the limited categories of the Understanding can supply us with a knowledge which is anything higher than a knowledge of mere appearance. We need higher categories, must look at things from still higher aspects if we are to arrive at truth, and so it became necessary to supplement the Kantian table of categories. The logic in its

* *Encyc.*, § 50.

† *Vgl.*, *Ibid.*, § 20.

‡ *Ibid.*, § 25.

advance leads us to ever higher and more adequate categories or view-points for grasping the Absolute spirit which moves through and is immanent in all things. The difference in categories may therefore be regarded as a difference in the aspects from which the one, full, concrete reality may be viewed, and the change of a lower for a higher category may be described as a substitution of a point of view more adequate to express the truth for one less so.

But we must beware of interpreting this "aspect doctrine" in a "subjective" manner—nothing could be farther from Hegel's thought. Truth and objectivity in the ordinary and everyday sense of these words belong equally to all the categories. "In common life truth means the agreement of an object with our conception of it. We thus presuppose an object to which our conception must conform. In the philosophical sense of the word, on the other hand, truth may be described, in general abstract terms, as the agreement of a thought-content with itself. . . . Untrue in this sense means the same as bad or self-discordant. In this sense a bad state is an untrue state; and evil and untruth may be said to consist in the contradiction subsisting between the function or the notion and the existence of the object. Of such a bad object we may form a correct representation, but the import of such representation is inherently false. Of these correctnesses, which are at the same time untruths, we may have many

in our heads—God alone is the thorough harmony of notion and reality. All finite things involve an untruth ; they have a notion and an existence, but their existence does not meet the requirements of the notion. . . . We may express the problem of logic by saying that it examines the forms of thought touching their capacity to hold truth. And the question comes to this—What are the forms of the infinite and what are the forms of the finite ? ” * Formal correctness belongs to all the categories ; the highest categories are alone properly adequate to express truth. The Hegelian conception of truth may thus be compared with the Aristotelian (or Leibnizian) notion of “Actuality.” An advance, then, in the scale of categories signifies not an increase in the “correctness” of our notions, but that the aspects of the fact, the one concrete totality which they represent, and correctly represent, contain more actuality—more truth. Thus, though he agrees with Kant in regarding sense-perception as phenomenal, and in limiting the use of the categories of the understanding to giving us knowledge of appearance, yet he refuses to interpret this in a subjective sense. “The things of which we have direct consciousness are mere phenomena not for us only, but in their own nature ; and the true and proper case of these things, finite as they are, is to have their existence founded not in themselves, but in the universal divine Idea. This view of things, it is true, is as

* *Encyc.*, § 24, note. Cf. § 28, note (last par.), and § 51.

idealistic as Kant's ; but in contradistinction to the subjective idealism of the Critical Philosophy should be termed absolute idealism."* Similarly he finds fault with Kant for " explaining the finite nature of the categories to mean that they are subjective only, valid only for our thought, from which the thing-in-itself was divided by an impassable gulf . . . whereas they are finite in their very nature." †

There is one other mistake which we must avoid in the interpretation of the logic, and one which Hegel's language, or rather terminology, might often easily lead us into—i.e., that the categories have each application only to a portion or part of reality. Now there is no such splitting up of the one concrete whole in the way here suggested. Each category has reference to the whole, of one particular aspect of which it is the expression, though undoubtedly there are objects and events which more evidently reveal the applicability of certain categories than do others.

4. COMPARISON OF KANT'S AND HEGEL'S METHOD.

We are now somewhat in a position to compare the two philosophical methods, which we have been considering, at least in their leading characteristics. To a certain extent both take their stand

* *Encyc.*, § 45, note.

† *Ibid.*, § 60, note 1.

under the banner of criticism ; they are at one against preceding dogmatists of every school as to the necessity of subjecting to a strict examination the categories often used not only in ordinary life, but in philosophical speculation, without any attempt at justification, and apparently even without the need of such a justification being suspected. Both saw the circle involved in uncritical Empiricism ; whilst with Kant's attack on ordinary metaphysics with its proofs for the existence of God, the substantiality of the Soul, &c., Hegel not only sympathises as regards the necessity of its being undertaken, but even to a certain extent applauds the results. The categories of the understanding, those which Kant had under consideration in the *Critique of Pure Reason*, are in their nature finite, and are incapable of reaching the Absolute and Infinite. Yet even here they part company, for whilst Kant saw in metaphysics only a natural illusion of the human mind, Hegel saw implicit in it the germ of the proper way of reaching a knowledge of the Infinite.* Thinking experience means, as we have seen, transforming, and thus in a certain sense negating it. His main objection against the metaphysical arguments for the existence of God is that this negative side of the process of passing from the finite to the infinite is not sufficiently emphasised.

But though Hegel was as convinced as Kant of the necessity of subjecting the categories to strict

* Cf. *Encyc.*, § 50.

scrutiny, yet this was never his chief aim—this function of criticism, which his logic exercised, formed to some extent but a side issue to his main purpose, which was to find the most fitting and adequate expression for the Absolute. If, therefore, we look upon Hegel as being to a large extent simply a developer and elaborator of the ideas of his predecessor, the dependence we expect to find must be that of one brilliant mind receiving pregnant suggestions from another, rather than that of strict discipleship, and the development will be rather according to the spirit than to the letter. Even at the very standpoint from which they envisage their problems, as we have already seen, they part company—and this divergence was very fruitful in regard to their further speculations. Kant remains fast at the standpoint of what I have ventured to call the psychological individual—the standpoint of the atomistic psychologism of Hume. In this he, perhaps, betrayed the “subjective” tendency which had characterised the whole of modern philosophy since Descartes. To Hegel this standpoint is itself derivative and arbitrary, and needs criticism as much as do any of the principles and categories. He puts himself in a more objective and strictly logical attitude, having shown its necessity in the “*Phenomenology*,” whilst Kant ever comes back to the same question as a preliminary to solving his problems, “how is objectivity, validity for all, capable of being claimed and justified for connections of

ideas which, in themselves, would seem to be merely subjective ? ” This persistency in clinging to the notion of the somewhat atomistic individual, which is characteristic of every phase of Kant's thought, would be put down by Hegel to the credit of the abstract Understanding. A similar divergence of tendency is noticeable in the ethics of both, and indeed in the position which the Practical Reason and the Will hold in their systems of Philosophy—the primacy of the moral idea with the one, the intellectualism, with its leaning towards pantheism, of the other.

We cannot, however, further indulge in such reflections here, but must confine ourselves to suggesting the influence which this distinction of starting point had on their general methods. For it was really the standpoint he occupied which made the transcendental deduction of the categories appear of such importance to Kant, whilst his more universalistic position made it seem of slight import to Hegel.

“ The Science of Logic ” is therefore to a certain extent the expansion of the “ Transcendental Analytic,” but only of a portion of it, the portion of it, moreover, to which Kant seems to have devoted least thought, and which, at any rate, is its least satisfactory side—the metaphysical deduction of the categories. Kant's main endeavour was to show that the Understanding and its categories are necessary to the possibility of experience—it was thus that he was enabled to

answer Empiricism, whilst the method of his answer also gave him the weapon he required against metaphysics. His attempt to show *what* categories are operative was by no means so successful. In this regard he can hardly be said to employ any method at all—at least in the ostensible deduction—his derivation of them from the divisions of Judgment in formal logic can hardly be called methodical. But the real "metaphysical" deduction of the categories, and a deduction, moreover, which is in complete accord with, and in the spirit of, the critical method, is to be found not here where it nominally belongs, but in the section on the *Principles of the Understanding*. Hegel's logic is an elaborate attempt to give, by means of pure reason alone, a perfect and exhaustive table of categories, which should not only contain all the fundamental thought-types, but also present them in such a form that they would make an organic system, with their relations *inter se* and their relative importance and adequacy as modes of expressing the truth, clearly and definitely shown. Where, therefore, in Kant we find apparent lack of connection and development not only among what went by the name of the categories, but also in the larger divisions of his philosophy, where Sense was separated from Understanding, this latter from Reason, the theoretical from the practical faculty, and both again from the teleological principle, we see in Hegel an attempt to establish, as it were, the

principle of continuity in this whole sphere. We thus meet in the latter more elaboration of detail, more systematisation and insistence on the transitions from one point to that just higher, and to a certain extent greater breadth of view and interest. With these is combined a stronger belief in the possibility of reaching real truth.

These two features are, however, more closely connected than might at first sight appear probable. For Kant, as we saw, the gulf between the phenomenal and noumenal was sharp and decisive, and for the theoretical reason impassable. Even though we may recognise in the Kantian treatment of his categories certain traces of development and differences of value, yet in what affects valid knowledge of the Ding-an-sich, they are all on an equal footing—theoretically employed they are all alike incapable of such transcendent use. The practical Reason can, however, establish with absolute certainty, though it cannot theoretically demonstrate, the existence of God, Freedom, and Immortality. Between these two points of view there is no satisfactory attempt at mediation; even in the Critique of Judgment the teleological categories remain mere subjective (although necessary) points of view; and the ideal which furnished the standard for judging of the world's progress is moral not theoretical; the "ought" remains the highest worth-category in the Kantian philosophy. In Hegel, on the contrary, we find no gaps, no impassable abysses. Consequently, although the

lower categories in the scale are very inadequate to the nature of the Absolute, yet they are not robbed of all value even in this respect ; they have to a certain extent reflected back on them a portion of the validity of the Absolute Idea, with which they are connected in an unbroken advance, and of which finally they are but moments. It is true, indeed, that in the very lowest categories, Being, &c., we are as near untruth as pure Reason can go, and perhaps their characterisation of the Absolute is "meant" rather than expressed. But from this on we have a gradual increase in the adequacy with which the categories characterise the Absolute. The final category in the scale, the Absolute Idea, forms thus, as it were, the criterion according to which the others may be judged regarding their capacity to hold truth. It is no longer, however, the "ought,"—a phrase of Kantian subjectivity he rejects as impatiently as he does every other—the theoretical ideal replaces the practical, τὸ ἀγαθόν gives way to the νόησις νοήσεως. Thus for Hegel all the categories have theoretical value, the highest as well as the lowest, and all (though naturally not to the same extent) have application to the ultimately Real, the lowest as well as the highest. Instead of saying that for Hegel the categories possess validity as applied to the Ding-an-sich, it would be more correct to say that he, like Kant, limits them to the world of experience, beyond which he recognises no Ding-an-sich ; but in comparison with his pre-

decessor his scale of categories is incomparably wider and richer, and their function is not merely to synthesise, but also to rethink and find the true meaning of the "given of sense."

If there be any foundation for the suggestion made above, that Kant was in a certain sense dogmatic and rationalistic, it must be held to apply with double force to Hegel. He may have been right in rejecting the psychologistic individual starting-point of Kant, but it is questionable whether he did not also include the necessary limitations of human knowledge in this rejection.* He, like his predecessor, demands a critique, but not in order to fix the limits of human knowledge as such—such an undertaking he held to be impossible and in a certain sense contradictory, seeing that fixing limits implies that we have already transcended them—but to determine the validity, scope and capacity of the individual categories for knowledge. Yet on the other hand if these thought-forms and principles, or at least some of them, partake more of the character of ideals than of actual knowledge, as we suggested was possible, then Kant acted more dogmatically than his successor in limiting their number to the well-known twelve. From this point of view the

* Against the objection that the claim to fix the limits of knowledge implies that we have already transcended them, Kant might reply that he has guarded himself sufficiently against it, in attributing to the Reason the power to form theoretical, moral, and aesthetic ideals.

category of efficient cause would stand in much the same position as final cause—it would represent a postulate rather than an axiom.

Even if we grant that the psychological standpoint is secondary and derivative, it must be acknowledged that for modern minds interested in philosophy it is a very easy one to adopt. A method, therefore, which makes it the point of view at which problems present themselves, might perhaps possess advantages in getting into more direct and real contact with many questions, in comparison with one which rejects it, and thereby runs the risk of failing to see the full force of the problems connected with it. It must also be acknowledged that their common starting-point made Kant's answer to Hume all the more convincing. Again, the constant appeal to the possibility of experience, though bound up with necessary limitations, was perhaps, as far as it went, less liable to arbitrary and artificial employment than a method depending merely on pure reason.* Yet there was always connected with it the danger of remaining stuck fast in the, to a certain extent, arbitrary abstractions of the

* It must be said, however, that the dialectic for Hegel was largely used merely as a frame, used to systematise the categories derived from an extensive acquaintance with Science, especially on its historical side. It is also true that in the "Logic" the development takes place with a constant regard to the concrete use to which the thought-forms are put in the Philosophies of Nature and Mind. Cf. Windelband, *Geschichte der neuern Philosophie* II., p. 314.

understanding, and of overlooking the necessary connections and transitions.

Thus we see it was but natural that, notwithstanding that they had much in common, different problems should present themselves to the two philosophers, and that even where the problems were the same the method of solution should be different.

CHAPTER II.

KANT'S TREATMENT OF THE CATEGORY OF QUANTITY

I. INNER RELATION OF THE LOGIC TO THE ÆSTHETIC.

OUTWARDLY, at all events, as we have seen, disconnection and lack of graduated transition, not only in details, but also between the principal parts, is one of the striking features of Kant's presentation of his doctrine, when compared with Hegel's. That hints, at least, of connection and articulation are not altogether wanting, however, will, I hope, be made clear in what is to follow. And first let us consider the relation which subsists between the Æsthetic and the Logic, divisions of his philosophy which at first sight, as they appear in the Critique of Pure Reason, seem to be left without any suggestion of a necessary transition or inward connection between them. That this is, however, not the case, I have already tried to show. But in order to justify the interpretation I have given of Kant, and also because of the close relation subsisting between quantity, number, and space and time

(the latter two of which Kant indeed calls *quanta* *) it will be necessary to go into this question somewhat more fully.

At a cursory reading of the Critique the Aesthetic seems to present the form and marks of a more or less finished product, and to a certain extent rounded off and completed whole. As far as the doctrines it contains are concerned, it is apparently fairly definite and final, without any reservations as to important conditions and contributions to be supplied by the Analytic. It teaches pretty clearly that space and time are the necessary conditions, the *a priori* forms of outer and inner perception; that all definite spaces and times are but limitations of them, they in themselves being infinite. The statements that they are intuitions, not conceptions, and can make no claim to validity outside the boundaries of sense experience cannot cause much difficulty. And if they are the necessary conditions without which experience cannot take place, it seems pretty evident that any constructions made in them cannot be contradicted by anything that experience may contain; in other words the apriority and necessity of mathematical judgments, which hold good independently of experience, seems established. True, the interpretation which we are to put on phrases like "*a priori*," "necessary forms and sources of experience," "known independently of and before all experience," &c., cannot

* B. 438.

be so readily decided ; if we are trusting to the Aesthetic alone it is probable that] we shall interpret these in a purely psychological sense. This air of self-sufficiency and ability to stand on its own legs, as well as the psychological character here mentioned, is probably due, as I have already suggested,* to the historical origin and growth of the Aesthetic out of the " Inaugural Dissertation " of 1770. That the reader passes on without perceiving any inner necessity impelling him to make the advance to the Logic is probably due to the fact that, being no mere sense-being, he is ready unconsciously to import the necessary assumptions—assumptions, necessary to the completion of the doctrines enunciated in the Aesthetic, but by no means capable of being explained from the stand-point of sense-knowledge.

He is not, however, long in the Logic before he finds that it contains assertions which seem strangely at variance with many he has just read, even flatly contradicting them. In the Aesthetic, as we have seen, space (and the same holds good *mutatis mutandis* of time) is described as the presupposition, the *a priori* form of outer perception, which must lie at the base of all external experience and precede it ; it is essentially *one*, and, as the presupposition of Geometry, must also be simple and homogeneous ; the manifold in it in fact springs entirely from limitations of this one simple space, which is, moreover, given as

* V. *supra*, p. 26, n.

infinite. When we speak of many spaces we mean thereby only parts of the one and the same uniform space. The parts then *succeed* the whole.* But in the Logic all these positions seem one by one to be abandoned, and their opposite asserted with equal decision. We now find that the presentations of space and time “cannot be produced except by a synthesis of the manifold which the senses offer in their original receptivity.”† “In order to change this manifold into a unity of intuition (as, for instance, in the representation of space), it is necessary first to run through the manifold and then to hold it together.”‡ Thus we find that for the presentation of space and time we have need of the Synthesis of Apprehension, the Synthesis of Reproduction, and the Synthetic Unity of Apperception. “The purest objective unity—namely, that of the concepts *a priori* (space and time) is possible only by a reference of all concepts to it (the transcendental apperception).”§ And in the “Schematism” we read: “Number is nothing but the unity of the synthesis of the manifold of a homogeneous intuition in general, I myself producing the time in the apprehension of the intuition.”|| Notwithstanding, therefore, the

* Cf. A. 23–25, B. § 2.

† A. 100.

‡ A. 99.

§ A. 107. Cf. B. § 17, and p. 143.

|| A. 143, B. 182. Cf. B. 202.

character of simplicity which was ascribed to it in the Aesthetic, we are not now surprised to find space described as "compounded." * I have already had occasion (in the introduction) to refer to the fact which Kant frequently draws attention to, especially in the "System of Principles"—viz., that space and time cannot "in themselves be perceived." † All this seems likewise to do away with the infinity of space and time as "given representations." ‡ But even still more contradictory if possible is the result of the Transcendental Dialectic, that an actually infinite space or time cannot be an object of experience, but must remain for ever an unrealisable ideal, an insoluble problem. Similarly the position, that the parts cannot precede the whole, must suffer the same fate in the light of the above considerations. § But it is apparently even explicitly abandoned. For in the "Axioms of Intuition" we find: "Phenomena are always quantities, and *extensive quantities*; because as intuitions in space and

* B. 136, note.

† Cf. Also A. 429, n., B. 457, n., A. 431, B. 459.

‡ *Ibid.*, p. 426, B. 454, and note. "We may perceive an indefinite as a whole, if it is included in limits, without having to build up its totality by means of measuring—that is, by successive synthesis of its parts. The limits themselves determine its completeness by cutting off everything beyond."

§ The position in the Aesthetic, it will be remembered, was—"These parts cannot be considered as antecedent to the one and all-embracing space, and, as it were, its component parts, out of which an aggregate is formed, but they can be thought of as existing within it only."

time, they must be represented through the same synthesis through which space and time in general are determined. I call an extensive quantity that in which the representation of the whole is rendered possible by the representation of its parts, and, therefore, necessarily preceded by it.”*

Are we to regard these apparent contradictions as insoluble, and thus reduce the whole “Critique of Pure Reason” to a regular chaos of absurdities; for the inconsistencies exist not only between the Aesthetic and the Logic, but find place within the latter itself, since Kant frequently repeats the results of his investigations into the apriority of space and time in the course of his logical enquiries? The case seems to me to stand thus. If we interpret Kant psychologically and give the terms, “*a priori*,” “precede,” and the like always a psychological and temporal signification, then I do not see what hope there is of getting rid of these contradictions and patent absurdities. Similarly I do not think that it will be possible to hold that his problems and standpoints were merely logical, and that we can refrain from taking phrases like “precede,” sometimes in a temporal sense. If, however, we look upon Kant’s starting-point as always psychological, and on his method as logical or epistemological, as I have suggested in the introduction, then not only do the above-mentioned knots unravel themselves, but we are led inevitably to look upon the Analytic as necessary

* B. 202, 203.

even to the solution of the problems apparently exhaustively dealt with in the Aesthetic. The following would then be more or less the train of thought. In the Aesthetic he investigates the presuppositions (in a logical, not in a temporal, sense) which are inherent in the very idea of outer and inner perception. Those he finds to be space and time, which are intuitions, and, therefore, as the necessary presuppositions of sense-experience, *a priori* intuitions. Moreover, abstraction has been made from all consideration of content, so that these *a priori* forms are pure and infinite, the matter which supplies the defining boundaries being abstracted from. But the matter of knowledge or experience comes to us in a disconnected fashion. Looked at in their psychological origin our sensations are as the motes of the sunbeam, and as such are quite incapable of giving us the representations of space and time. Unless, therefore, these be unified and welded together experience will be for us impossible. Kant then here again in the Analytic sets on foot an enquiry into logical or immanent content-presuppositions—viz., into the conditions (this time on the side of the unifying factor in our knowledge, the Understanding) which render experience possible. Thus it is that the action of the Understanding is necessary to the actual presentation, the actual consciousness of space and time. Moreover, it is clear that the pure space and time which are pure intuitions and *a priori* conditions

of all sense perception, are not as such capable of being intuited in the actual consciousness of the individual—or in other words space and time, though logically they are *a priori*, psychologically are *a posteriori*. Finally, the Infinite Space which remains an ideal in the Dialectic is not the pure intuition, but the actual presentation to consciousness, through the constant and ceaseless putting together of the various pieces of space given in perception or in imagination. Thus we see that not only is it possible to reconcile the seemingly contradictory statements of the Aesthetic and the Logic, but we find that in order fully to establish the doctrines of the Aesthetic we must advance to the Logic, or, to put it somewhat differently, the Logic is the presupposition of the Aesthetic in much the same sense as space, time, and the categories are the presuppositions of experience. The interpretation of Kant I have suggested is necessary to save his doctrine from numberless contradictions; but it is, moreover, also in agreement with his own express language. The following is a succinct account of his position on this point.

“As formal condition of the possibility of changes, time is no doubt objectively prior to it; subjectively, however, and in the reality of our consciousness the representation of time, like every other, is occasioned solely by perceptions.”* He was himself also aware that in the Aesthetic too much was attributed to sense alone. “Space,

* A. 452, B. 480, note.

represented as an object (as required in geometry), contains more than the mere form of intuition—namely, the *comprehension* of the manifold, which is given according to the form of sensibility, into a *perceptible* (intuitable) representation, so that the *form of intuition* gives the manifold only, whilst the *formal intuition* gives unity of representation. In the Aesthetic I had simply ascribed this unity to sensibility, in order to show that it precedes all concepts, though it presupposes a synthesis not belonging to the senses, and by which all concepts of space and time become first possible. For as by that synthesis (the understanding determining the sensibility) space and time are first *given* as intuitions, the unity of that intuition *a priori* belongs to space and time, and not to the concept of the understanding.” *

2. PROOF OF A DEFINITE ORDER AMONG THE CATEGORIES.

We shall similarly find that the apparent disorder and arbitrariness prevailing among the categories will give way, on closer examination, to order and reason. To this question we must now address ourselves in order to discover what exactly is the position which quantity occupies in the system. At first sight, as suggested, it might seem that there is for Kant no definite order

* B. 160, note.

among his thought-forms, that they are simply put down beside each other without any attempt at a closer determination of their mutual relations. That this impression is due rather to Kant's manner of presenting his doctrines than to the actual course of thought which was operative I shall now attempt to show. And first, I may point out that Kant practically always enumerates his categories in the same order, and when he does make a departure from it [as—*e.g.*, in the case of the paralogsisms, where he commences with substance and then proceeds backwards, without, however, disturbing the mutual internal arrangement any further], he expressly calls attention to it. We must therefore assume that there was for him a definite order of his categories which he considered the most natural, so that any departure from it seemed to call for explanation. Not only this, but he expressly calls attention to the fact that the table of categories is very serviceable, or rather essential to laying the *plan* of a science, since it is not only a complete, but also a *systematic* and orderly presentation of all the "elementary notions of the Understanding." He further, both in the *Critique* (B. § 11), and in the *Prolegomena* (§ 39 note), calls attention to the fact that many ingenious remarks may be made on the table of categories—and we find that these have almost exclusively to do with their classification and systematisation. Let us now, availing ourselves of these hints, examine a little more

closely the inter-relations which subsist between the categories.

The isolation in which the four groups of categories seem to stand to each other is probably due to the attempt to "metaphysically deduce" them from the divisions of judgments current in formal logic. In the usual text-books on the subject it is well known little attempt is made to systematise and show the connection between the various heads of division. Judgments were first divided under the head of quantity; secondly, under that of quality, and so on, without any serious effort being made to show why this order of treatment was followed and no other.* Kant's categories, when they first meet us, present these same characteristics of outwardness and want of connection with each other, nor is it clear why they are enumerated in the order they are in preference to any other. But this apparent arbitrariness of arrangement proves, as we proceed, to rest on more solid ground. The isolation in which the different categories in each group stand to each other is first broken down. It is pointed out that the third springs really from the combination of the other two—not, however, in such a way as not to require for this purpose a distinct act of the understanding, since we may have present the first and the second without the third member arising, as will be illustrated in the case of quantity (§ 11 B.).

* Cf. Hegel, *Werke* III., pp. 42, 43.

In the same paragraph (§ 11 B.) we find mention of a distinction which runs right through the whole critical philosophy—namely, that between the Mathematical and Dynamical Categories, “the former of which refers to objects of intuition (pure as well as empirical), the latter to the existence of those objects (either in their relation to each other, or to the understanding).”

Here we have a natural division of the categories with reference (in the true Kantian spirit) to the *use to which they are to be put*, and not necessarily depending on any artificial deduction from a table of judgments of Formal Logic. The matter to which the categories are to be applied is either the immediately given of sense or the relation between the objects of experience, or between these and the mind. In the case of the former the matter in question is either pure intuition (space and time) when the corresponding category is extensive quantity, or it is the content of sensation itself, in which case its intensive quantity is all that is capable of been known *a priori*—and to the category which this represents Kant gives the name of quality. Similarly in the second case, we have the categories of Relation and of Modality. Similar considerations meet us in the introductory remarks to the “Principles of the Understanding,”* where, moreover, attention is

* Cf. B. p. 201 note. “All *conjunction* is either *composition* (compositio) or *connection* (nexus). The former is the synthesis of a manifold, the parts of *which* do not belong to each other neces-

directed to an important distinction which exists between mathematical and dynamical principles—viz., that the former have to do with the synthesis of the homogeneous, the latter with that of the heterogeneous manifold. On this distinction rests finally the difference as regards immediate certitude which exists between the mathematical and the dynamical principles. Conceptions of quantity (the category of the synthesis of the homogeneous manifold) alone are capable of being constructed in the pure intuition, and, therefore, the principles of the mathematical

sarily. Such is the synthesis of the *homogeneous*, in everything that can be considered *mathematically*, and that synthesis can be divided again into *aggregation* and *coalition*, the former referring to *extensive*, the latter to *intensive* quantities. The second type of conjunction (nexus) is the synthesis of a manifold, in so far as its elements *belong to each other necessarily*. Thus the accident belonging to a substance, or the effect belonging to a cause, though heterogeneous, are yet represented as *a priori* connected, which connection, as it is not arbitrary, I call dynamical, because it concerns the connection of the *existence* of the manifold. This again may be divided into the *physical* connection of phenomena among each other and their *metaphysical* connection in the faculty of cognition *a priori*." In this note there is perhaps a hint that the synthesis which takes place by means of the mathematical categories and the comparisons, such as "equality," "identity," and "inequality," which lie at the basis of mathematical procedure, are what Hegel would call "external"—that is, they fall within the mind that institutes the comparison, but do not belong to the object of thought considered as it is in itself. An examination of the section of the *Critique* dealing with "the Amphibolies" shows, perhaps, a similar line of thought. In both of these instances, however, we have to do rather with hints than with any fully developed piece of doctrine. Cf. *infra*, where we deal with Hegel's treatment of mathematics.

use of the Understanding alone possess unconditioned necessity. The dynamical principles, on the other hand, are discursive in their use, and though they are also in their way necessary, they are so "only under the condition of empirical thought in an experience, that is, only mediately and indirectly"; they do not possess the immediate evidence which belongs to the others. The same distinction plays an important part in the Antinomy doctrine, and is the cause of the difference in methods of solution to which the mathematical and the dynamical antinomies respectively are subjected.*

Another difference which Kant notices between the mathematical and dynamical categories is that "the first class contains no correlates, which are to be met with in the second class only. This difference must have a ground in the nature of the understanding."† This ground he does not give here (B. § 11), but it is again plainly to be found in the distinction of application of the idea of objective unity to the homogeneous and heterogeneous manifold respectively. Thus the distinction is equivalent to that which Hegel afterwards made between Being and Essence. Nor is the resem-

* Cf. The Antinomy doctrine. Also *Critique of Practical Reason*, Rosenkranz, p. 236.

† B. § 11. Cf. *Proleg.*, § 39, note. The paragraphing in Meiklejohn's Translation is not the same as in the original text. From § 5 (M.) on, four must be added in order to find the corresponding § in B. Thus § 7 M. corresponds to § 11 B.

blance merely formal, but is also to be found in the categories treated under each head. The further characteristics by which Kant distinguishes the two classes of principles—viz., as constitutive and regulative, corresponds exactly to Hegel's description of Being and Essence as being respectively the actual in its immediacy, and in its reflection or mediation. These two classes of categories differ furthermore in the fact that whereas in the case of those of Relation and Substance we have a principle of the understanding corresponding to each separate category, with quantity and quality we have only one principle corresponding to the whole class. This seems to show that the separate moments are less self-dependent in the latter than in the former case.

But this is not the only hint given by Kant as to the reasons he had for adopting the order of the categories which begins with Quantity and leaves off with Modality. The "Schematism" shows that there is a regular advance in complexity as we proceed from quantity to quality, and so on up to modality. The category of quantity and its schema has reference to the creation of time itself, quality to the matter in time, relation to the order of this matter in time, modality to time itself "as the correlative of the determination of an object, as to whether and how it belongs to time.* Similarly an examination of the

* B. 185. Cf. especially the sentence which follows. "The schemata, therefore, are nothing but *a priori* determinations

Principles of the understanding shows us that we have an ascent from the simpler to the more complex, and we find that the more complex always presuppose the more simple.

We thus find a certain order, one might almost say development in the case of the categories. Yet we must not expect it in the same advanced form which we find in Hegel. With the latter the process of development belongs to the very essence of the logical investigations, with Kant it occupies a very subordinate place—and can hardly be said materially to affect his principal doctrines. Again, in Hegel the development is from one *pure* category to another, and takes place by means of the inherent dialectic of each notion, when held apart in hard and fast isolation from its contrary—the advance is immanent; whereas with Kant the order in the categories is due almost entirely to what Hegel would call our outer reflection; and the place of any member in the scale is determined not by consideration of it in its purity, but always with reference to its function as a necessary constitutive element in experience.

This same concrete character of Kant's thinking, this constant reference to experience, this refusal to think the category in its purity and for itself, apart from its function as synthesising factor of the

of time according to rules, and these, in regard to all possible objects, following the order of the categories, relate to the *series in time, the content in time, the order in time*, and finally, to the *complex or totality in time*."

manifold, also goes a long way to explain why Quantity precedes Quality, and not as with Hegel, *vice versa*. It is possible that the "metaphysical deduction" may have had something to do with this, for quantity is looked upon by formal-logic text-books as the "form" of the notion, as quality is that of the judgment—thus quantity would naturally precede quality. But I think that a *real* explanation may also be offered. Were we to consider the categories in their purity as Hegel does, then we may grant that a beginning should be made with the poorest, the most elementary of all, Being—the Being which is nothing. But such a mode of thinking would be altogether foreign to Kant's method and purpose. The categories are not investigated in what for Kant would be their emptiness, but as functions of the synthesising activity of the Understanding. When we consider them in this light we find that the functions performed by the categories are more advanced in the case of quality than those of quantity. In their concrete use, for which alone they had interest for Kant, despite any nominal resemblance which his categories of Reality, Negation and Limitation may bear the similarly named thought-forms of Hegel, they do not correspond to the latter. For Kant, Reality or Limitation is the category which assures objective validity to our estimations of the intensity or degree of any phenomenon, which fills time; it is more complex than simple extensive quantity, and presupposes it.

3. EXTENSIVE QUANTITY.

(a) *Metaphysical Deduction.*

We saw that the table of categories purports to be deduced from the Synthetic Unity of Apperception ; * we shall first, therefore, take account of this aspect of the case, and, in order to determine more closely the significance of the category of quantity for Kant, try to find the relation in which it stands to its " vehicle." The " metaphysical " deduction was foredoomed to failure, since it reverses the natural order of things. We shall now, however, subject this whole proceeding, as far at least as concerns " quantity," to a more minute criticism. Formal Logic divided judgments under this head into universal, particular, and singular. Since, however, the singular and universal both asserted the predicate of the whole of the subject, and they were consequently of equal value as far as syllogistic inference was concerned, it was customary to regard the singular as but a special case of the Universal. From these three (since he restores the Singular to its place beside the other two) Kant deduces the three categories of quantity—viz., Unity, Plurality and Totality.

But it is difficult to see how this division of judgments into singular, particular and universal

* Cf. B. 142. " These principles are all derived from the fundamental principle of the transcendental unity of apperception."

can make good its claim to be a purely formal division in any sense which would be useful for Kant's purpose. The character of the assertion seems to be the same in all three cases. When predicating "mortal" of "men," as in "all men are mortal," and in "some men are mortal," what we predicate remains the same, as does also the manner of predicating it, what changes is the subject of the judgment. That is, the difference between the three cases affects not the *kind* of judgment, but the subject which is predicated about. But a difference in the subject, though this be one of quantity, cannot be held a sufficient ground on which to base a distinction in the kind of judgment. Even in the language of Formal Logic itself the "form" of the judgment is in, or perhaps more correctly is suggested rather than definitely expressed by, the copula. But here the character of the copula remains unchanged. The connection which is asserted to exist between the subject and the predicate is in all three cases the same. Did difference in the quantity *as such* of the subject warrant us in holding a distinction in the form of the judgment, it is difficult to see why we should not be driven to hold that "fifty men are mortal" is a different kind of judgment from "sixty men are mortal."

But if these considerations are so plain and simple, it seems hard to understand how it is that the division of judgments according to quantity, which we are now criticising, managed to hold its ground so

long. That it did so, however, is due not to formal, but rather to methodological, considerations. If we look upon logic "as the science of the forms of thought," it is easy to understand how two distinct disciplines could come to be embraced under the same name, especially if we bear in mind the ambiguity of the term "thought," to which I have above called attention. For this term may be used to direct our attention either to the content thought of, "the object of thought," or to the thinking process. If we interpret it in the sense of thought-content, and keep the "objective" signification *alone* in view, then we shall have a logic whose business it will be to discover and systematically arrange the thought-elements which hold together the various sensation-products of our experience—in other words, Logic will be a science of the categories; and as these are generally and most naturally expressed in the Judgment, it will tend to devote itself mainly to the investigation of the nature and different kinds of judgment. It will indeed look upon the notion, judgment, and inference as being, in this connection, but different forms of expression of what is fundamentally the same function. If, however, our interest is partly also in the subjective signification of the term, thought will then appear to us as a means of getting from one judgment, given or assumed, or sense-datum, to another—i.e., Inference as a means of either gaining or rendering explicit knowledge will form the centre of the system, and

to this all other considerations tend to be subordinated. Logic will then be a methodology. Thus the one discipline will pay attention to the advance in the acquirement of knowledge, the other to the objective relations in the content of the thought.* The two disciplines are therefore distinct. Yet it is by confounding the functions of both that Kant "metaphysically deduces" his table of categories, and believes that he thus gets a certain and exhaustive inventory of the thought-forms of the Understanding in systematising the given of sense.

It is not difficult to see how the division of judgments into singular, particular and universal (or into universal and particular only, since the singular was accredited to either according to the exigencies of method, in "deduction" going with universals, in "induction" with particulars) was of importance from a methodological point of view. Yet even here it is perhaps not quantity as such that is operative, but another relation which it is used to express. If we take a particular judgment—*e.g.*, "some men are white"—and subject it to examination, we find that it does not mean what, on the face of it, it strictly expresses. *Either* it is based on an experience of instances, and then, though we use the two concepts "men"

* It is possible that we may look upon Aristotle as the founder of both, and perhaps it is thus that we can best explain his somewhat puzzling distinction between the demonstrative and the dialectic syllogism.

and "white" there is really no relation expressed between them. We find that certain things are white, and we *designate, point* out these by calling them men. But between "men" *as such* and "white" *as such* there is no relation of identity, subsistence and inherence, &c., *meant*. All that we can assert about the two concepts is that one *may* stand in one of these relations to the other, and our grounds for this modal judgment is that, as a matter of fact, in experience the two have been found together. *Or* it rests on an analysis of the concepts, when we find that the subject is of such a nature that when split up into its species or subspecies the predicate must be asserted of one or more of these. What is true then is not "Some S is P," but "All Sx is P."* In other words, we have the assertion of a necessary connection between the two concepts. Similarly what the universal judgment, in so far as it is a different kind of judgment from the particular, in so far, that is, as it is a true universal, and not a mere collection of instances, really means is the assertion, not of any chance relation between the predicate and all the *members*, or in technical language, the complete extension of the subject, but of a necessary connection between the *content* of the subject and that of the predicate. Now, the aim of Methodology is simply to expound

* *E.g.*, an examination of all that is involved in "triangle" shows us that "some triangles are equiangular"—i.e., "all equilateral triangles are equiangular."

rules which may enable us to replace our imperfect knowledge by more perfect—i.e., to teach us how we must proceed in order, on one hand, to explicate what is involved in the knowledge we already possess, and on the other, to substitute necessary (which may be expressed in the form of universal) for contingent (which may take the form of particular) judgments. Thus, though from the objectivo-formal standpoint, which Kant represents, the usual division of judgments under the head of quantity must be rejected, we can yet understand the important position which, owing to its methodological significance, it occupied in the post-Aristotelian logic.

Now, the nerve of the “metaphysical” deduction of the categories was the identity of the function of the Understanding “which gives unity to different representations in a judgment and that which gives unity to a mere synthesis of different representations in an intuition.”* But in the case of quantity (which is, indeed, fairly typical) the deduction must be worthless, because the division of judgments in Formal Logic, on which it was founded, is due not to an examination of them as such and for their own sake, but to entirely extraneous methodological considerations, which do not touch on the character of the judgment itself, considered as representing a strictly objective nexus.

* A. 79, B. § 10.

(b) *Transcendental and Real Deduction.*

Instead then of this vain attempt at deduction of the category of quantity, is it not possible from an examination of the Critique of Pure Reason to get one more in harmony with the whole spirit in which the Critical Philosophy was conceived? In discussing the question of the arrangement and order of the categories, I have already hinted that this is possible. Our task then would be to show how, according to Kant, "quantity" is a necessary presupposition or condition of the possibility of experience, and is involved in synthesising the given of sense according to the idea of the Synthetic Unity of Apperception. Paying attention, then, to the real rather than the apparent *motif* underlying the division of the categories, we find that the category of quantity is the category of the synthesis of the homogeneous in an intuition in general.* The possibility and necessity of this category, then, is what is to be shown. But here, as in other passages where Kant uses the word, under possibility is not meant mere freedom from contradiction. When, for instance, he enquires into the "possibility of mathematics," what he is interested in showing is *not* how this science is a perfectly consistent system, the outcome of the Understanding's construction in space and time (for as such, like metaphysics, also an

* B. 162.

a priori system of doctrine, it might be merely a collection of "vain imaginings"), but how this *a priori* science has validity for our experience. Similarly, here he has to demonstrate the applicability of "quantity" to experience, or, in other words, to determine its *real* significance.* Can we, therefore, prove that synthesis of the manifold according to the category of quantity is one of the conditions (in a logical, not psychological, sense) which render an objective experience possible for an individual, the matter of whose knowledge comes to him in the shape of successive sensation-units—we might almost say atoms—between the contents of which in their character as sensation-elements there is no necessary and real connection?

The Aesthetic has established that space and time are the necessary and *a priori* (logical and formal) presuppositions of all human experience;

* Cf. B. 300. "We cannot give a real definition of a single one of them [the Categories]—i.e., we cannot render intelligible the possibility of an object corresponding to them, without having recourse to the conditions of sensibility, consequently to the form of phenomena, to which, as their only proper objects, their use must therefore be confined, inasmuch as, if this condition is removed, all significance—i.e., all relation to an object, disappears, and no example can be found to make it comprehensible what sort of things we ought to think under such conceptions. The conception of quantity cannot be explained except by saying that it is the determination of a thing whereby it can be cogitated how many times one is placed in it. But this 'how many times' is based upon successive repetition, consequently upon time and the synthesis of the homogeneous therein."

the entire phenomenal world is subject to them. The possibility of an objective experience—i.e., one which can claim to hold good for all human beings—consequently presupposes as a condition the actual presence in consciousness of a presentation of space and time, which can lay claim to a similar objectivity. Now, could pure space and pure time be themselves objects of perception, then our difficulties might seem more readily capable of solution, as we should simply have to compare—*e.g.*, the concrete space-pictures, got according to the laws of subjective association of ideas, with our representation of pure space, and agreement with this, since it is the same for all, would guarantee us the objective validity we sought. But unfortunately for the possibility of such an easy solution, neither pure space nor pure time, as we have already had occasion more than once to point out, are themselves capable of being perceived. They are not given to us in the sense of being present to empirical consciousness before all experience. The representations of a definite space or time have rather to be generated by means of the synthesis or composition of the several unconnected concrete representations of the manifold, which are what are primary in the temporal order. But a subjective synthesis according to the laws of association, though it may be necessary—a point which Kant does not investigate as belonging not to epistemology, but to psychology, with which in the Critique he has

nothing to do—is not sufficient.* On the strength of such a subjective connection, induced by custom or how else, we have no right to claim objective validity for our representation. The difficulty practically arises from the same causes as that concerning the claim of the time-order of the content of our representations to objective validity.† The solution is to be found in the same way. We can claim objectivity for our space and time pictures, so far as these are concerned with pure intuition, only if the synthesis of the manifold as far as it concerns the content has been according to an *a priori* and necessary rule of the Understanding. This rule, whatever it may be, has to do entirely with the pure intuitional side of our presentation, not, as in the case mentioned, with the inter-connection and order of the content in space and time. Now, space and time, the pure *a priori* forms of Sense-experience, are thoroughly homogeneous.‡ The rule therefore

* We must always bear in mind that epistemology, not psychology, is the subject of Kant's investigations, and, consequently, that here, for instance, he is not enquiring into the psychological origin and evolution of space and time representations. Cf. Windelband, *Geschichte der neuern Philosophie* II., pp. 59, 60.

† V. *supra*, Introduction, p. 15 *seq.*

‡ Even were this not granted as an *a priori* necessity, and as self-evident, it might still be argued that the claim to objectivity for our world picture, as far as its intuitional side is concerned, could only be justified on the supposition that every one, from his standpoint, synthesised the manifold given of sense (as far as this intuition was concerned) in the same way, or in other

which we seek is that which regulates the synthesis of the manifold homogeneous.

“Now the consciousness of a homogeneous manifold in intuition, in so far as thereby the representation of an object is rendered possible, is the conception of a quantity. . . . All phenomena are quantities, *extensive* quantities, because as intuitions in space or time they must be represented by means of the same synthesis, through which space and time themselves are determined.” *

(c) *Moments of the Category of Extensive Quantity.*

Thus we see that extensive Quantity, as the category of the synthesis of the manifold homogeneous in phenomena, is a necessary condition of the concrete presentation to the individual of objective space and time, to which the Aesthetic has shown all experience must conform. Let us

words employed the category of the synthesis of the homogeneous on the supposition that space (and time) was uniform. The Homogeneity of space is, therefore, a necessary presupposition of the justification of the claim to objective validity. For the importance of this note v. *infra*.

* B. 202-203, cf. B. 154-156. It might be objected that in the paragraph from which this quotation is taken Kant is giving an account of the origin and determination of space and time, which is too intellectualistic and artificial, almost mythical; but the analysis which he is giving is logical and ideal, not psychogenetic. Cf. the first paragraph (2nd edition) in the proof of the anticipations of perception, where a similar analysis is undertaken, and where it is impossible to believe that it is meant psychogenetically.

now investigate what are the "moments" of this category, and what is involved in its application. Its function is, as we have seen, to *synthesise* the *manifold homogeneous*. It therefore involves that the elements which are to be united in objective unity must be considered as identical—i.e., abstraction must be made from all difference in the contents, and attention paid only to the similarity existing between them. But if this is done it is difficult to see how, confining ourselves to mere conceptual considerations, we can secure that multiplicity which is also a requisite for the application of quantity. "Out of mere notions or conceptions we can get no solution for the question how a thing can be the same sort as many others—'that is, can be a quantity?'"* "When an object is presented to us several times, but always with the same determinations (*qualitas et quantitas*), it, if an object of the pure understanding, is always the same, not several things, but only one thing (*numerica identitas*); but if it is a phenomenon, we do not concern ourselves with comparing the conception of the thing with the conception of some other, but, although they may be in this respect perfectly the same, the difference of place at the same time is a sufficient ground for asserting the numerical *difference* of these objects (of sense). For one part of space, although it may be perfectly similar and equal to another part, is still outside of it, and for this reason alone is

* B. 288.

different from the latter, which is added to it in order to make up a greater space. It follows that this must hold good of all things that are in different parts of space at the same time, however similar and equal one may be to another."*

Here, as in many other parts of the *Critique*, we find Kant insisting, against the rationalistic monism of the Leibnizo-Wolffian school, on his dualism of sense and understanding as the only means of solving what to the pure Reason must seem antinomies, or even contradictions. Space, the pure form of all external sense-experience, supplies the necessary means of solution.

From these considerations the three "moments" or "aspects" of the category of quantity will become clear. There is first the element or idea of the "units" which have to be systematised. These are, however, not one, but many, and this gives us the second "moment." Yet, though they are thus many, they are not thought of as unconnected and in no relation to each other—i.e., they are not thought of as a *mere* manifold, but are grasped together into the unity of one complete whole. This corresponds to the triple division under the head of Quantity, which Kant gives—viz., Unity, Plurality and Totality. The relation indicated as subsisting between the members of each trilogy also becomes clear—namely, that the third arises out of combination

* A. 262, 263, B. 319, 320. Cf. B. 328.

of the other two. "Thus Totality is nothing else but Plurality contemplated as Unity." *

The mere fact that we have a manifold of units does not, however, mean that we have synthesised them into a unity, so as to make a totality of them, this is an aspect not involved either in the idea of the units as such, or of a manifold of them in so far as it is a manifold, but demands a particular synthesising act of the Understanding.† Were we to use Hegel's conceptions we might say that truth is to be found neither in the mere unit, nor in the multitude of unconnected units, but in the totality in which this multitude is regarded as a unity. That this was also, to a certain extent, Kant's meaning is probable. The absolutely simple cannot form an object of experience,‡ and neither in space nor time "those two original *quanta* of all our intuition"§ can the smallest portion be perceived. Every unit is itself a plurality and totality of lesser units. Number, the schema of pure

* B. § 11.

† Cf. B. § 11. "Let it not be supposed, however, that the third category is merely deduced, and not a primitive conception of the pure understanding which is by no means identical with those which are exercised in the first and second. Thus the conception of a number (which belongs to the category of Totality) is not always possible where the conceptions of multitude and unity exist (for example, in the representation of the infinite)."

‡ Cf. A. 772, B. 800.

§ A. 410, B. 438.

quantity,* belongs to the category of totality.† It is clear in this connection that in the case of number neither the unit, as a mere unit, nor any multitude of them, in so far as they are unconnected, can be regarded as a resting-place for our mind. True, in the case of the representation of the infinite, we seem to have, as Kant mentions, the presence of unity and multiplicity without totality, but this is no real presentation or knowledge, but partakes rather of the nature of the Will-o'-the-wisp. This attribution of only a relative character to the three moments of the category of quantity seems to receive strong support from a consideration of the alternative titles which are given in the *Prolegomena*; ‡ Unity (the measure), Plurality (the amount), Totality (the whole). Here the Unit is no longer even designated as if it were to be regarded as having significance and value when taken by itself, but is considered as a unit of measure—i.e., with distinct reference to the complete *whole*, in which it is contained a certain number of times, and which is thus measured. In this connection I may call attention to the fact that, whereas under the head of Relation and Modality, each category is responsible for a distinct principle, yet in the case of Quantity—and the like holds good of Quality—we have but one principle corresponding to all three members. This seems to show that although

* A. 142, B. 182.

† B. § 11.

‡ § 21.

in the case of Relation and Modality it still holds good that the third member arises from a combination of the other two, yet each possesses more relative independence than the moments of the category of Quantity. This is in harmony with another characteristic trait in Kant's manner of exposition, and explains how it is that his references (*e.g.*, in illustrating some of his doctrines, as the impossibility of the categories having meaning in themselves apart from their application to the given of sense) are not to Quantity, Quality, Relation, &c., but to Quantity, Quality, Substance, Cause, Community, &c.*

(d) Explanation of an Apparent Anomaly in the Metaphysical Deduction.

We are now also in a position to explain what, at first sight, seems an anomaly in the "metaphysical deduction"—namely, that corresponding to the division of judgments into Universal, Particular, Singular, we find not, as might at first appear natural, Totality, Plurality, Unity, but a reversal of this order. Thus Totality corresponds not to the Universal but to the Singular, and Unity not to the Singular but to the Universal. This arrangement of judgments and of corresponding or "derived" categories appears not only in the First Edition of the *Critique*,

* Cf. B. 288, 291-293, A. 241-243, B. 300-302, &c.

but also in the Second, and in the *Prolegomena*.* It is, therefore, not to be regarded as if it were due to mere oversight or chance. The difference in judgments of Universality, Particularity and Singularity, as far as strict quantity alone is concerned, is a mere difference in number, and were the categories also mere different expressions of number, we should naturally expect that the Universal judgment would give rise to totality, and the singular to unity. But the categories under Quantity do not denote a distinction in number, but are the necessary moments of the thought-form, according to which we synthesise the manifold homogeneous. Number, as we shall see lower down, is due to the application of this whole category (whose constituent moments are Unity, Plurality and Totality) to certain conditions of sense perception, and is, consequently, not itself the pure thought-element. Now, the universal judgment gives us, not totality as a category, because what it emphasises is the universal concept, which guarantees or symbolises the homogeneous units. Again, since the particular judgment emphasises not the unity or synthetic element in the concept, but the individuals in their separateness, and since the function of the concept here is simply to act as

* Cf. A. pp. 70 and 80, B. 95 and 106. *Proleg.*, § 21. *Ibid.*, § 39 n., where, although (for a particular purpose) he rearranges the order of the members of Quality, he leaves that of Quantity untouched.

a kind of index finger for these separate individuals, it is but natural that this form of judgment should be looked on as the analogue of the elements of Plurality or Discontinuity. Nor need we feel surprised that the singular judgment is represented by Totality, seeing that this is itself a unity, *not* a mere manifold. One of the chief distinguishing marks of Totality is definiteness. As far, however, as quantity is concerned, the true general or universal judgment is absolutely indefinite; from the formal logic standpoint the "extension" of the subject notion is infinite. Of the three classes of judgment, the singular alone is perfectly determinate in quantity as quantity.*

The category of quantity is thus the thought-form of the synthesis of the homogeneous in the given of sense. On investigation it is shown to contain three moments or non-substantial, dependent elements which emphasise respectively the characteristics of homogeneity of the units (corresponding, as we shall see, to Hegel's Attraction, Continuity or Unity), their multitude (represented in Hegel by Repulsion, Discontinuity or Amount), and their unity (in Hegel, Limit or Number), all three of which are active in the synthesis of the homogeneous. This category, as we have shown, has been justified by demonstrating its necessity to the possibility of experience, with reference to which alone it has meaning. But its work in reference to the con-

* Cf. *infra*, the corresponding paragraphs on Hegel.

stitution of experience is, like that of every other category, performed unconsciously, being revealed to consciousness only in the critical examination of what is involved in the possibility of experience. But besides this it has also a conscious application, the objective validity of which, however, rests finally on the fact which we have just had under consideration—namely, that it is one of the pre-suppositions which render experience possible.

4. MATHEMATICS AND THE APPLICATION OF QUANTITY TO SPACE AND TIME.

(a) *Mathematics in General.*

Mathematics is the science of the conscious application of the category of quantity. “For the external sense the pure image of all quantities (*quantorum*) is space; the pure image of all objects of sense in general is time. The pure *schema* of quantity (*quantitatis*), as a conception of the understanding, is number, a representation which comprehends the successive addition of one to one (homogeneous quantities).” * “But to determine *a priori* an intuition in space (its figure), to divide time into periods (its duration), or merely to cognise the quantity of an intuition in space and time, and to determine it by number, all this is an operation of the reason by means of the construction of conceptions, and is called mathe-

* A. 141, B. 182.

matical." * We must now, therefore, consider Kant's treatment of mathematics and its allied conceptions.

Descartes,† in his opposition to the later scholastic misuse of the syllogism, had seen the distinction which exists between it and mathematical procedure. It was clear to him that by means of the pure syllogism we can never arrive at new knowledge, but only at a clearer explication of what is involved in that which we already possess. He therefore proposed to substitute for this "barren method," one which in another sphere had already shown its fruitfulness; he would replace syllogistic by geometrical demonstration. The distinction apparently between these two modes of procedure in Descartes' eyes was, that in the latter for every new real step made in advance we must appeal to new intellectual intuition of self-evident truth. This hint, however, was not developed even by those of his followers, who pushed to the furthest extreme his method of demonstration *more geometrico*. The problem still remained for Kant to make clear the essential distinction of the synthetic procedure of mathematics and the mere analytic character of the syllogistic process. Like Descartes he held that from the syllogistic method *alone* no new knowledge can be secured, only a fuller exposition of the old. Judgments are either analytic or

* A. 724, B. 752.

† Discours de la Méthode.

synthetic. In the former we have in the predicate simply one of the attributes which an analysis of the subject notion shows to be already contained in it; the judgment therefore gives us really no new information, in addition to what we already had when we were acquainted with the subject-notion and its meaning. In synthetic judgments, on the contrary, the predicate contains an element, which no mere analysis of the subject and its meaning can show to be already contained in it. Experience is in most cases our justification for predicating of the subject an attribute thus foreign to it. But there are judgments which are synthetic, and which at the same time lay claim to a universality and necessity, which no mere appeal to any experience can justify: judgments which claim to be valid not only in the cases which have fallen within our experience and been observed, but also in cases which could never have been observed, occurring in the future as well as in the past. They are judgments to which not only no exception has occurred, but to which no exception *can* occur. To these, mathematical judgments, among others, belong.

Now, as far as the manner of *reasoning* is concerned the mathematician makes full use of the syllogism. But though this be so, it is not hence that mathematics derives its fruitfulness and what characteristically distinguishes it from other deductive disciplines. The advance in mathematics and the necessity and apriority of mathematical

propositions depend on the fact that at each new stage we make fresh appeal to sensuous intuition, not, however, to mere *empirical* intuition, for such could never supply us with the foundation for universal and necessary judgments but to the pure intuitions and *a priori* forms of space and time. Thus whilst mere consideration of what is involved in a conception can never lead us to new properties, over and above those which go to form its meaning, the mathematician is able "by means of a chain of reasonings, always guided by intuition, to establish necessary synthetic judgments." *

"The thoroughness and exactness of mathematics rests on the peculiar nature of its definitions, axioms and demonstrations."† Now, as far as the first of these is concerned in dealing with empirical conceptions we may feel well satisfied if, as the result of long and laborious investigation, on a few occasions, we are luckily able to set up even moderately satisfactory definitions. More often, however, we must remain contented with seizing upon a few characteristic marks which will serve our purpose of distinguishing our conceptions more or less sharply from others. Philosophical and empirical knowledge ought be satisfied if it can end, instead of beginning, with definitions. Even such *a priori* notions as Substance, Cause, Right, &c., are, strictly speaking, not capable of

* A. 716, B. 744. Cf. A. 718, 719, B. 746, 747.

† A. 726, B. 754.

real definition. The adequacy of the notions to their objects can indeed be assumed, but not apodictically demonstrated.* The only notions which are capable of exact definition are those which we ourselves arbitrarily put together. We may in this case be sure that the notion contains no more than we are aware of, because what is in it we ourselves have put there. But in most cases such notions are mere idle figments, and can lay claim to no reality. The peculiarity, however, of mathematical definitions is that, although arbitrary in the sense we have just used, and so capable of being known with the utmost accuracy, they are yet capable of being constructed in pure intuition—that is, we are able to present *a priori* the corresponding intuition.† The advantage therefore which mathematical conceptions possess over all others in relation to definition is, that though the result of an arbitrary synthesis they are yet capable of being constructed in intuition. The definition is therefore accurately known, and at the same time is adequate to its object, because its object depends on it, not conversely. It is not every *a priori* notion which is thus capable of being constructed in pure intuition—viz., in space and time, these two original quanta of all our intuition—but only quantitative ones.

“Those who thought they could distinguish

* Cf. A. 729, B. 757.

† A. 729, B. 757.

philosophy from mathematics by saying that the former was concerned with *quality* only, the latter with quantity only, mistook effect for cause. It is owing to the form of mathematical knowledge that it can refer to quanta only, because it is only the concept of quantities that admits of construction—that is, of *a priori* representation in intuition, while qualities cannot be represented in any but empirical intuition.”* It is a similar capability of appeal to pure intuition which makes mathematical axioms possible—that is, judgments which are self-evident, necessary and *a priori*, in no way depending on the number of times which experience has shown them to hold good, and yet at the same time synthetic—that is, not due to the analysis of the subject notion. In sentences like $7 + 5 = 12$, and “a straight line is the shortest distance between two points,” the predicate contains something new, something not already contained in the subject, and yet they lay claim to a necessity and universality which no mere appeal to experience could justify. But let us construct them in the pure intuition, and their necessity and universality becomes at once self-evident. We have already seen that it was this same appeal to intuition for every actual *new* piece of knowledge that essentially characterised the deductive procedure of mathematics—i.e., its method of demonstration.

* A. 714, B. 742.

(b) "*Reality*" of *Mathematics*.

Mathematics as an *a priori* and self-consistent system is thus explained. But the doubt must immediately present itself, whence comes its objective validity? Its claim to be a self-consistent system will cause no difficulty; proper caution in our reasoning processes will secure as much. That it will not consist in a mere ringing of the changes on a few original propositions or definitions, but will have ever new matter to deal with, the constant appeal to intuition will be a sufficient guarantee. But granted all this, the question must present itself for answer, how can we claim objective validity for this science, a science which starts from arbitrary definitions and constructions, owes its axioms and its advance in its demonstrations to an appeal not to experience, but to what is itself but an *a priori* form of the mind. Unless we can give a satisfactory answer to these doubts, the mere self-consistency of mathematics cannot afford us much comfort, since no one can doubt our capability to erect as many self-consistent systems as we will, which, however, can claim to be nothing else than figments of the brain. Were self-consistency the all-sufficient test, even a metaphysis of the supersensible would very easily be possible. When Kant, therefore, investigates the conditions of the possibility of mathematics he is not busied in showing that the latter, as a

mere self-consistent system, is capable of construction—so much would hardly seem to him worthy, or even in want of proof. What he is anxious to demonstrate is that the system of mathematics being such as we have described, resting on constructions in the pure intuitions, space and time, according to the category of quantity, holds good and is valid for our ordinary experience-world.* This, he thinks himself, in a large measure to have accomplished when he has shown that space and time are the *a priori* forms of all sense-perception, outer and inner, and therefore of all experience. Consequently, any judgments holding good of constructions in these *a priori* forms must likewise hold good for all human experience, and can never be contradicted by it.

The Aesthetic, as we have already remarked, gives only one of the conditions which render

* Cf. B. 147, A. 156, B. 195, A. 159–160, B. 199, and especially A. 223–224, B. 271. Cf. also A. 157, B. 196. “Although we know, therefore, a great deal *a priori* in synthetical judgments in reference to space in general, or to the figures which the productive imagination traces in it, without requiring for it any experience, this our knowledge would, nevertheless, be nothing but a playing with the cobwebs of our brain, if space were not to be considered as the condition of the phenomena which supply the material for external experience. Those pure synthetical judgments, therefore, refer always, though mediately only, to possible experience, or rather to the possibility of experience, on which alone the objective validity of their synthesis is founded.” Cf. also *Proleg.*, § 13, n. 1.

mathematics possible. It is clear that the understanding is also necessary, since the constructions in the intuition, of which there is question here, take place according to notions and conceptions.* But even apart from this, as has, indeed, been already made clear in treating of the relation of the Aesthetic and the Logic, the Understanding's action is necessary for the actual objective presentation of space and time to the empirical consciousness. Mathematical axioms and methods of demonstration are valid because the principles on which they are finally shown to rest are at the same time principles which are necessary to explain the possibility of our ordinary so-called sense-experience. We have already seen how a consideration of the logical presuppositions of the actual empirical presentation of space and time to a consciousness, the matter of whose knowledge comes to it in the semi-atomistic way Kant, following in this the lead of the "Sensation" psychology of Hume, believed, led us to an enunciation of the principle that "all intuitions are extensive quantities." "It is through this principle alone that it becomes possible to make pure mathematics in its full precision applicable to objects of experience, which without that principle would by no means be self-evident—nay, has actually provoked contradiction. . . . The synthesis of spaces and times, as the essential

* Cf. among other passages, *Proleg.*, § 20, last par.

forms of all intuitions, is that which renders possible at the same time the apprehension of phenomenon, and therefore every external experience, and consequently also all knowledge of objects, and whatever mathematics, in its pure use, proves of the former, is valid necessarily also of the latter." *

(c) *Geometry.*

Turning now to the particular mathematical disciplines of which Kant treats—and they are very limited in number—let us first consider the case of geometry. As long as this science, together with the other branches of mathematics, was considered to be developed out of the principle of contradiction, simply because it was in accord with it, no serious difficulty could arise as to its validity. But for those who shared Kant's conception of its character the need for justification naturally arose. This need Kant believes himself to have satisfied by his doctrine of the apriority, on the one hand, of space as the necessary form of all outer sense-experience, and on the other hand of the category of the synthesis of the homogeneous—namely, quantity, in accordance with which constructions in space and time are made. "Empirical intuition is possible only through pure intuition (of space and time); consequently, what geometry affirms of the latter is

* A. 165, B. 206.

indisputably valid of the former. All evasions, such as that objects of sense do not conform to the rules of the construction in space, must fall to the ground." * The representation of a determinate space is possible only through the composition of the homogeneous, and the consciousness of the synthetic unity of this manifold ;† so that the perception of any object of external perception is possible only through the synthetic activity of the category of quantity. "On this successive synthesis [of piece of space and piece of space] of the productive imagination, in the generation of figures, is founded the mathematics of extension or geometry, with its axioms, which express the conditions of sensuous intuition *a priori*, under which alone the schema of a pure conception of external intuition can exist." ‡

* A. 165, B. 206.

† B. 202.

‡ A. 163, B. 204. Cf. A. 223–224, B. 271. "It seems, indeed, as if the possibility of a triangle could be cognised from the conception of it alone (which is certainly independent of experience); for we can certainly give to the conception a corresponding object completely *a priori*—that is to say, we can construct it. But as a triangle is only the form of an object, it must remain a mere product of the imagination, and the possibility of the existence of an object corresponding to it must remain doubtful, unless we can discover some other ground, unless we know that the figure can be cogitated under the conditions upon which all objects of experience rest. Now, the facts that space is a formal condition *a priori* of external experience, that the formative synthesis, by which we construct a triangle in imagination, is the very same as that we employ in the apprehension of a

Non-Euclidean Geometry.

Since Kant's time, however, the development of what has come to be known as Non-Euclidean Geometry has been supposed to have shown the inadequacy of this line of argument, as indeed the impossibility of proving the "necessity" of the ordinary geometry. Euclidean geometry has operated under certain assumptions which have always baffled every attempt to *prove* them. It has, for example, been forced to assume either that the angles of a triangle are together equal to two right angles, or that through the same point one, and not more than one, parallel can be drawn to any given straight line. Now, however, it has been found that starting from assumptions different from those of Euclid, we can develop various perfectly self-consistent systems, the results of which are not in harmony with those of ordinary geometry. Thus we may regard space as having a constant curvature instead of being homogeneous, of being of four instead of three dimensions, as being such that we can draw

phenomenon for the purpose of making an empirical conception of it, are what alone connect the notion of the possibility of such a thing with the conception of it. In the same manner, the possibility of continuous quantities, indeed of quantities in general, for the conceptions of them are, without exception, *synthetical*, is never evident from the conceptions in themselves, but only when they are considered as the formal conditions of the determination of objects in experience."

(through a single point) any number of parallels to any given line, and so on. We find, moreover, that these assumptions involve us in no *inherent* absurdity, no self-contradiction. What effect now has all this on the Kantian doctrine, on the necessity * of geometrical axioms and judgments? Have we not here a patent refutation of this claim? Yet I think that Kant would not experience much difficulty in finding a satisfactory reply. He is in no way forced by his doctrines to deny the possibility of erecting a perfectly self-consistent reasoned system, resting on assumptions which contradict those of ordinary geometry. If we are consistent in our reasoning, there is no cause why we should not be able to manufacture any number of such systems—but *they have no validity for our experience*. There is no *contradiction* in supposing that more than one parallel to any given line can be drawn through one point, but we cannot intuit it; we cannot present such a possibility in intuition: such a notion cannot be “constructed.” Similarly it is possible to imagine beings capable only of perception of space in two dimensions, living on a sphere, and for whom, consequently, the formulæ of ordinary plain geometry would not hold in their daily life, whereas those of spherical geometry applied though they were to space in two dimensions would be found to work. But again the answer comes from the

* B. 206. Cf. B. 271, 299.

Kantian standpoint, "such a phantasy does not, no doubt, involve any inherent contradiction, but then our intuition is not of such a character, and it is with this alone we have to do." As already insisted on, what Kant was interested in proving was not the possibility or impossibility of a system of reasons and consequences involving no inherent contradictions, but the validity of any *a priori* constructed system *for our experience*. Now, of all the suggested systems, that of Euclid alone can lay claim to such validity, because "space, as the geometrician thinks it, is exactly the form of sensuous intuition we find *a priori* in ourselves, containing the ground of the possibility of all external phenomena (as regards their form)."* We find, therefore, that phenomena "must necessarily, and in the most exact manner, agree with the propositions of the geometrician, which he draws from no fictitious conception, but from the subjective foundation of all external phenomena—namely, the sensibility itself."†

But though it seems to me that the positive work on Non-Euclidean Geometry cannot be used to attack the Kantian method of argument, unless it can show that its conceptions can be constructed in intuition—and this has not yet been done—the objections from a purely sceptical point of view are not so easily set aside. It may be granted

* *Proleg.*, § 13, n. 1.

† *Ibid.*

to Kant that space is a necessary condition of all outer sense perception. But it does not immediately follow, nor is it self-evident, that this space which is thus a necessary precondition of all external perception, which is in fact external perception itself in its most general characteristics, is identical with the space which is the consciously regarded object of the geometer. The space with which the geometer has to do, in so far as it is an object of empirical consciousness, is the result of a process of abstraction.* It is not the actually given space of ordinary experience, filled as it is with a manifold of heterogeneous objects. This being so, the question naturally arises, as it must with every product of the abstracting faculty, how far it can claim to represent the original from which it was drawn, how far the possibility of error is excluded—may not this homogeneous and simple space of three dimensions with which geometry deals be, to a certain extent, the result of a process of idealisation, with certain characteristics—*e.g.*, that of homogeneity, more strongly emphasised than they are in our actual experience—and may not this exaggeration or idealisation give a postulatory character to the axioms and demonstrations of geometry which does not quite accord with the irrefutability and necessity which Kant ascribes to them? Only one way out of the difficulty, in accordance with the

* B. 43.

principles of the Kantian philosophy, seems to remain. We saw above that the actual time-order of the contents of our sensations (which all come to us successively) can be determined objectively only if our experience is no mere heap of sense-elements, but is an organic whole, the position of whose parts is determined according to definite *a priori* rules and principles—viz., those connected with the category of cause. Similarly in the present case it may be held that we can claim objective validity for our space presentations, only in so far as the synthesis of the different parts out of which it has been built up has been in accordance with the category of quantity—i.e., the category of the synthesis of the *homogeneous* manifold.*

But in so far as we reject the sufficiency of Kant's metaphysical deduction of his categories, and replace it by an attempt to discover the thought-forms by an appeal to the conditions necessary to the possibility of experience, in accordance with the true spirit of the critical method, one objection still seems to remain against the sufficiency of this procedure in the case both of quantity and causation. Even if we grant that our experience, in so far as it claims to be objective, is possible only under the presupposition of certain forms of the Understanding being presupposed as inherent in it, yet seeing that, in the

Cf. B. 202 *seq.* Also *Proleg.*, § 20, last par., and *supra*, p. 91, note.

construction of the actual fabric of experience, their work is performed silently and unconsciously, it may seem open to legitimate doubt that we should be able to bring them to exact and conscious formulation. Is it not more likely to be true that what I may call the actually operative categories are more anthropomorphic in character than the, to a certain extent, artificially purified principles which are the scientific postulates? In so far as we try to give conscious formulation to the Forms of Understanding which have unconsciously worked in the formation of experience, how far can we be certain that the two series actually exactly correspond? A certain and probably a great amount of correspondence there undoubtedly will be, and it is to this that we probably owe the fact that ordinary geometry has shown itself to be the most useful in reference to experience. But yet this is no absolute guarantee of complete identity. Nor does it seem to be altogether removed from the range of possibility that the synthesising functions, which are operative in the creation of experience, may themselves be silently and slowly, but none the less surely, undergoing a process of change or development. This possibility does not appear to be excluded on any *a priori* grounds. The refusal to take it into account constitutes what must be regarded as a dogmatic element in the Kantian theoretical philosophy, arising probably from his firm and fixed belief in the real validity and

“necessity” of mathematics and the Newtonian Natural Philosophy.

To all this Kant would reply that he was investigating not a question of fact, but one of right. He did not seek to discover what forms were *actually* operative in experience, but what forms we must assume to be involved in it *in so far* as we can regard its claim to validity as *justified*, and he would hold that he had shown that it was only in so far as we looked upon experience as synthesised according to the categories of—*e.g.*, quantity and cause, that we can claim objectivity for it. To the objection touching the development of knowledge, he would reply that the development takes place not in the form-side, Reason being a complete system, but in thoroughly, and ever more thoroughly systematising the never exhausted given of sense in accordance with these forms. The development is due not to the operation of any new categories, but to the fact that the ever-increasing matter of knowledge makes new combinations necessary, and often leads necessarily to the modification of old ones, perhaps even to their total rejection.

(d) *Measurement of Space.*

Connected with the question of the possibility of Geometry stands that of the possibility of the measurement of space. Both presuppose that two or more lines, surfaces, volumes, angles,

&c., may be compared with each other and pronounced equal or unequal, and in the latter case greater or less. All measurement consists in the comparison of one quantum (the unit of measurement) with another, in order to discover how many times it is contained in it. It is evident that the unit of measurement and the quantity which is to be measured must be regarded, as far as this operation is concerned, as thoroughly homogeneous. In measurement, therefore, the whole to be measured must be regarded as being compounded out of a multitude of units, and these units must be looked upon as being thoroughly homogeneous. Measurement then is but an application of the category of quantity. Here, again, the question or difficulty arises, as it did in the first consideration of quantity, how one thing can be one with many, how one thing can be different from another and yet equal to it, and this is a condition to be satisfied by the units of measure. We saw that the pure reason was of itself unable to solve this riddle—only an appeal to the intuition showed its possibility. It would seem to follow then that for Kant all measurement reduced itself finally to a comparison of parts of space and time, since these are the two pure intuitions, and, indeed, the two original quanta. But we shall immediately see the category of quantity is not directly applicable to time, and this latter can be measured only indirectly—namely, through the medium of space.

It would seem, then, as if all measurement ought finally to reduce itself for Kant to a comparison of portions of space.

(e) *Measurement of Time.*

We have now to deal with the application of the category of quantity to the "form of inner experience"—Time. The result of this application of quantity, according to Kant, is, as we have already seen, *Duration*. Time is not only the form of inner perception, but is also the general form of all sense experience whatsoever. But though possessing this privilege over space, which is limited to outer perception, and consequently being able to form the mediating link between sense and understanding, as is shown in the doctrine of Schematism, it labours under the disadvantage that none of the categories are directly applicable to it.* "It can be easily shown that the possibility of things as quantities, and, therefore, the objective reality of the category of quantity, can be represented only in the external intuition, and only through its medium be applied to the inner sense also."† Here we have to do with this characteristic in so far as quantity is concerned.

Exactly in the same spirit is Kant's continuous insistence on the necessity of "drawing a line" to represent time, its parts and duration, to

* Cf. B. 291.

† Cf. B. 293.

ourselves.* “We cannot represent time, which is not an object of external intuition, in any other way than under the image of a line, which we draw in thought, a mode of representation without which we could not cognise the unity of its dimension, and also we are necessitated to take our determination of periods of time, or of points of time, for all our internal perceptions from the charges which we perceive in outward things. It follows that we must arrange the determinations of the internal sense, as phenomena in time, exactly in the same manner as we arrange those of the external senses in space.”†

The same course of thought appears in the treatment of the “Analogies of Experience,” “the Refutation of Idealism,” and in the “Paralogisms of the Reason.” The notion of a “substance” presupposes “a permanent intuition,” as a necessary condition of its application to the given of sense, and so of its *real* application. “Now we have in the internal intuition nothing

* Cf. A. 33, B. 50. “And precisely because this internal intuition represents to us no shape or form, we endeavour to supply this want by analogies, and represent the course of time by a line progressing to infinity, the content of which constitutes a series, which is only of one dimension; and we conclude from the properties of this line as to all the properties of time, with this single exception, that the parts of the line are coexistent, while those of time are successive.” He seems to think that this property helps to make clear the intuitional (as opposed to the conceptual) character of time. Cf. *ibid.*

† B. 156. Cf. 154.

permanent, since the 'I' is only the consciousness of my thinking."* It is this which prevents the use of the notion of substance in connection with inner experience, and undermines all attempts at building up a rational as distinct from a purely empirical Psychology.† Duration, as we saw, is the quantity of time, but since time itself can be no object of perception, a consciousness of this duration as such is possible only under the presupposition of something "permanent," which can be perceived in the continuous flow of things in time, a "permanent" which cannot be got in mere inner experience, but necessitates an appeal to outer spacial perception. "It is only by means of the permanent that existence in different parts of the successive series of time receives a *quantity*, which we entitle *duration*. For in mere succession existence is perpetually vanishing and recommencing, and, therefore, never has even the least quantity. Without the permanent, then, no relation in time is possible."‡

* B. 412.

† Cf. B. 291. "For the purpose of presenting to the conception of substance something permanent in intuition corresponding thereto, and thus of demonstrating the objective reality of this conception, we require an intuition (of matter) in space, because space alone is permanent, and determines things as such, while time, and with it all that is in the internal sense, is in a state of continual flow."

‡ A. 183, B. 226. Cf. 262. In this connection cf. also 291-293. "The Refutation of Idealism." B. XL. *seq.*, note; 275-278, and the Paralogisms in A. and B. The treatment of the

Kant here touches on a problem which has attracted some attention since his time—namely, the problem of time-measurement. As is well-known our direct subjective time-estimation—i.e., our estimation of the length of time as it appears to us immediately—can make no claim to objectivity. Our immediate determination of the velocity, and so of the duration, of an event depends upon the quickness of our faculty of apperception, so that it varies between different species of animals, and also probably between different individuals of the same species. Similarly we have the well-known psychological fact that time filled with many new experiences seems short in passing, but long in retrospect, whilst the opposite seems the case with “empty” time. Everything points to our inability to measure time directly. The great advance is made when we assume, for example, that periodic movements over the same space or amount of space, as in case of the pendulum, takes place in equal times. Our measurement of time—i.e., the conscious application of the category of quantity to it, is not direct, but takes place

first and third Analogies shows the importance of space for the categories of relation, whilst the changes between the statements of the general principle of the Analogies (omission of the word ‘Time’) and of the third Analogy (addition of the word ‘Space’) from the first to the second Edition point in the same direction. We have already seen (*supra*, pp. 93, 94, in the quotation from the first *Amphiboly*, B., p. 320), the part which Space plays in showing the ‘possibility’ of quantity.

through the mediation of space measurement. But the presupposition which we made is itself justifiable only on the assumption that our experience is a "systematic totality with a thorough-going interrelation of parts"—a cosmos ruled by law. Thus the mere consideration of what is involved in the application of the categories of quantity really forces us beyond it to those of relation. Thus not only is there a certain order to be found in the Kantian table of categories, but also a certain necessity of development. Yet, as ever, it is *our* consideration of what the possibility of experience demands that makes this necessity clear, and it does not spring from any inner dialectic of the *pure* categories themselves.

(f) *Number, Measure, Arithmetic.*

We have been dealing with the conscious application of the category of quantity to space and time, and it now remains to consider the part played by it in the creation of number.* A cursory glance at the manner of Kant's metaphysical deduction, as well as the titles he assigns to the categories which fall under the head of quantity, might lead one

* Cf. A. 717, B. 745. "But mathematics does not confine itself to the construction of quantities (*quanta*), as in the case of geometry, it occupies itself with pure quantity also (*quantitas*), as in the case of algebra, where complete abstraction is made of the properties of the object indicated by the conception of quantity."

to suppose that number was simply the pure category, the pure thought-form. But we have already seen reason to believe that this is not the interpretation to be put on the moments of Unity, Plurality and Totality, and we shall now see that number is really the result of the combined application of all three to the conditions of sense-experience. Time, as so often insisted on, is not itself an object of perception. For the actual consciousness of succession as such we need the active co-operation of the Understanding which enables us "in drawing a straight line (which is to serve as the external figurative representation of time), to fix our attention on the act of synthesis of the manifold, whereby we determine successively the internal sense, and thus attend also to the succession of this determination." * Thus we need not only a succession of conscious states, but also, what is not contained therein, a consciousness of this succession. The understanding, therefore, does not find this idea of succession already there, ready made, as it were, but is active in its creation. †

It is just the same with the problem of number. It might seem that, as the empiricists hold, unity and plurality as such were already given in the presentations of mere sense, in so far as we experience one or several sensations, and that nothing

* B. 154.

† Cf. B. 155.

was left for the mind to do but directly abstract these conceptions. But here again the important point is the distinction between a unity or manifold of sensations and the consciousness of this unity or manifold as such. We may experience successively ten strokes of a bell, without thereby being conscious of them as being ten in number. For the presentation to us of number as such the action of the synthesising power of the Understanding in reference to the homogeneous in space and time is necessary. Having noticed that certain representations are similar, and abstracting entirely from any differences which may exist between them, we must grasp them in their separateness and subject them to a synthetic process. The single acts in the train of synthesis must therefore be distinguished, and then, on the grounds of the similarity existing between them, be fused together into a further unity. "Number is the successive addition of one to one (homogeneous quantities). It is nothing else than the unity of the synthesis of the manifold in a homogeneous intuition, by means of my generating time itself in my apprehension of the intuition." * Number is, consequently, neither a mere sense-presentation, still less a pure-thought product, but the result of the influence of the Understanding on the Imagination in connection with the successive synthesis of the manifold homogeneous.

* A. 143, B. 182.

The purely intellectual moments active in the production of number are the three "categories"—Unity, Plurality and Totality. There is necessary as primary condition the distinction of the units. But even though we have got a unit, we have not yet got number, for *one* in itself, as the mere beginning of the series, is, strictly speaking, not a number—there is as yet no counting—for this we need at least *two* units. Plurality is therefore quite as essential to our purpose as unity. But the notion of number further requires that this plurality or multifold of distinct units should be grasped together into, and regarded as, a further unity. But this is the Totality, which thus, as Kant remarks, is a synthetic combination of the other two moments—Unity and Plurality.* Number therefore corresponds not to Unity or Plurality, but to Totality as embracing both of those,† and uniting them in a higher Unity, without, however, the loss of their distinctive characteristics. The phrase "an infinite number" is, consequently, for Kant, a contradiction in terms, an impossibility—for to the notion of number is essential the idea of Totality, of completeness, of being grasped together into one whole and so being fixed and determined, which is exactly what the idea of infinity denies.‡ Just as in the continuous addition of one portion of space or of time to another there is present no inherent necessity to pause at any given stage, so in the case of counting which in its essence is very

* B. § 11, p. 110-111.

† *Ibid.*

‡ *Cf. ibid.*

similar to these two processes, there is an inherent tendency to continue it "to infinity." Thus the essence of number seems to contradict the nature of the process which produces it. In so far as this may be held to be a different problem from the infinity and infinite divisibility of space and time it cannot be said that Kant has fully dealt with it. As we shall afterwards see it was this contradiction which led Hegel to "transcend" quantity and find its truth in measure. Kant could, of course, always find a reason for stopping at any definite quantity in an appeal to the matter in experience, and owing to his always seeing problems in their reference to experience it is easy to understand how this question had not for him that force it had for his successor, who was working entirely with the pure idea.

But in so far as this appeal to experience and to the matter therein contained is made, we must remember that number can give us no information except on the presupposition that we know the character of the unit, so that in this case also the truth of quantity would be measure. The same may be said when the appeal is to space and time, when indeed it is, if anything, plainer that the character of the unit is quite as important for knowledge as the number of times it is contained. It cannot, of course, be held that Kant distinctly holds the doctrine that "the truth of quantity is "measure." For Kant Measure was not a pure category, but rather the result of the application

of the category of quantity to space and time ; it would, therefore, be one of these "derived conceptions" or "predicables" of which he speaks in the "*Prolegomena*." * We have seen that he holds that, except through the mediation of external sense, quantity cannot be applied to inner sense, which means, as we have suggested, that we cannot claim objective validity (which the categories alone can guarantee) for our subjective estimation of the time-flow. The question here is plainly one of measure. These considerations enable us to understand the alternative titles he gives for the three categories of quantity in the "*Prolegomena*" (§ 21)—Measure, Amount, Whole.

The same result seems to follow from a consideration of the relation in which the two original *quanta* of all our intuition—space and time—on the one side, and the schema of *quantitas*—number—on the other, stand to each other in regard to continuity and discreteness. "Space," we find, "consists only of spaces, Time only of times." Divide space as we may—and the same holds good, *mutatis mutandis*, of time—we shall never get anything which is not itself a space—we can never arrive at the smallest possible space. Space and time are consequently *quanta continua*. All phenomena consequently, in so far as they are intuitions, or in so far as they are intensive

* § 39. Cf. also *Critique*, A. 82, B. 108.

quantities—i.e., have degree (for intensive quantity is also continuous), are continuous quantities. From these we must, according to Kant, distinguish an aggregate.* An aggregate is not a continuous quantum. Thus we should call thirteen florins, considered as so many coins an aggregate—i.e., a number of pieces of money. “And as in every number we must have unity as the foundation, so a phenomenon taken as a unity is a quantity, and as such always a continuous quantity (*quantum continuum*).” † The unit therefore which Number has as its foundation is not a mere unit without attribution of any quality, but is a continuous unit, or—in the words of the *Prolegomena*—“a measure.” ‡

Arithmetic—the mathematical science which deals with number—is valid (in the Kantian sense), because number is simply the bringing to explicit consciousness of the activity or acts of synthesis of the Understanding which are necessary to the creation of time itself. We determine the inner sense and its pure form, and pay explicit attention to the successive acts of determination. Thus when in the Aesthetic he has established the doctrine of the *a priori* character of time as the pure form of all sense experience, Kant sees that he has taken a very essential step towards estab-

* A. 170-171, B. 212-213.

† “Continuity is the Quality of Quantity.” Cf. A. 176, 715, B. 217, 743.

lishing the objective validity of Arithmetic for our experience. The two branches of mathematics, with which we have dealt, contrast pretty clearly Kant's doctrine with that of the English Empiricists, regarding the part played by the spontaneity of mind in the creation of knowledge.

5. INTENSIVE QUANTITY.

(a) *Metaphysical Deduction.*

So far we have been dealing exclusively with extensive quantity, which is what Kant expressly includes under the head of the category of quantity. But in addition to this there is another kind of quantity, to which we must now devote some attention—namely, that which is called intensive. This is not the result of the application of the category of quantity, but is due to "Quality." As far as the "metaphysical" deduction is concerned remarks similar to those made in this respect about quantity hold good—at least as far as regards the result. Kant divides judgments under the head of Quality into—Affirmative, Negative and Infinite. Corresponding to these he gets the three categories—Reality, Negation and Limitation. On the question of Affirmative and Negative judgments we shall have something to say immediately—at present the addition to these two of a third—namely, "Infinite"—must engage our attention

for a few moments. This, as is well-known, takes the form of "S is non-P," and probably owes its origin partly to the desire to find a sphere under which S can be *subsumed* when it has been decided that it is not P, partly to the tendency to make all judgments affirmative, so that S is not P should be replaced by S is non-P, a judgment affirmative at least in form. It is called infinite because the sphere non-P is infinite as compared with P, including all what is not P (perhaps even "nothing"). It gives us the category of limitation, because, through the subtraction of P from this infinite sphere, this latter is so far limited.

On account of these considerations Kant holds that, for transcendental purposes, though affirmative in form, it deserves a place beside the affirmative judgment. But the question really is whether it deserves a place beside the *negative* judgment? A little consideration will, I think, show that it is really only another verbal expression of this latter, whilst as far as thought is concerned, it is wholly identical with it. The "concept" non-P is *unthinkable*; seeing that in its extent it embraces everything and every notion (including nothing) which is non-P, it possesses no marks which could form its content and so enable us to grasp it. Thus, though no doubt capable of being *expressed* in language, it is not capable of being an object of thought. When I try to think "S is non-P" what I really think

is "S is not P." The example which Kant gives "the soul is non-mortal," if taken as meaning the same as the "soul is immortal," is really no example of the infinite judgment. "Non-mortal" if taken as equal to immortal is not really an infinite notion, but is thoroughly positive. Firstly, it has application only to living things, and not to everything in general which is non-mortal; secondly, the meaning of the word as ordinarily used is really positive, being equivalent to "destined for eternal life." Even if we admit distinctions of quality among judgments, still the infinite judgment has absolutely no *locus standi*. But, as we shall see afterwards, the category of limitation is an essential moment in intensive quantity, and therefore must really owe its validity and right to be considered an *a priori* form of the Understanding to considerations other than its deduction from the infinite judgment. This would lead us to suspect what our whole treatment of the category of quantity has sufficiently established, that for Kant the metaphysical deduction did not really occupy the place he assigned to it, and that the connection of the categories with the table of judgments served only to supply a frame for them and convince him of the completeness of his "table."

An examination of the function which the distinction into affirmative and negative fulfils in formal logic leads to the same result. As far as the "objective form" which binds subject and

predicate together is concerned, there is no distinction between the notion, the question, the affirmation and the negation. The theoretical element which we consider to subsist between the elements is in all four cases the same.* What is different is the attitude of the mind towards the whole content—composed of subject, predicate and the bond between them. As far as this is concerned—and it is this attitude which justifies our considering the judgment as a form of thinking logically, or at least methodologically, distinct from the notion and the question—we have, no doubt, a right to distinguish between negative and affirmative judgments. The quality of judgment is essentially the decision on the truth-value of the relation thought in the judgment.† The distinction therefore under quality, though it may be very important as far as truth and its acquisition is concerned, as well as for methodology, leaves the character of the theoretical synthetic function, which connects subject and predicate, untouched. We here again find that the metaphysical deduction does not rest on a consideration of the theoretical element in the judgment itself—and yet it is to the supposition that it does so rest that its whole plausibility is due.

* Cf. Lotze, *Logic*, § 40.

† Windelband, *Das System der Kategorien*.

(b) Transcendental Deduction.

As happened in the case of quantity, the real deduction of the category of quality proceeds along other lines. Space and time, as we have so frequently had occasion to remark, are not themselves, in their pure form, capable of being perceived. Consequently, the perception of them requires that they should contain something that can be felt.* The phenomena therefore which are the objects of perception “contain, over and above the intuition, the materials for an object (through which is represented something existing in space or time)—that is to say, they contain the real of sensation, as a representation merely subjective, which gives us merely the consciousness that the subject is affected, and which we refer to some external object.”† Now every sensation, which is thus necessary to our becoming actually conscious of space and time, has a certain degree. But how can we claim objective validity for what appears to be merely our subjective feeling? As far as we consider the sensation as a psychical state, our subjective estimation of its strength, or its strength as it appears to us, and consequently the strength of the physical reality it represents, is determined by many circumstances, such as the state of our organism, and must vary for different individuals and for the same individual at different

* Cf. *Metaph. Found. of Nat. Sc.* Explan. I., note 2. Par 1 towards end.

† B. 207.

times. It is difficult to see what meaning measurement can have here; that a certain colour is brighter than another is a statement that seems to have meaning, but that as a felt sensation it is twice or ten times as bright seems to have none. In fact measurement is only applicable to spacial quantities, and we cannot reduce the intensity of our subjective sensations as such to space-dimensions. Into the attempt made by recent psycho-physics to apply mathematics to psychical states and their strength, we cannot further enquire here; it is sufficient to point out that, probably influenced by such considerations as those I have mentioned, Kant rejected the possibility of any such attempt.* Direct estimations of the strength of sensations as such could not but remain "judgments of perception." They could never claim universality in the sense of holding good for all.

But even where our judgment concerns the greater or less intensity of two phenomena, how can we claim objective validity for it, seeing that so much depends—*e.g.*, on the state of the perceiving subject and of his organism? The answer must be that it is only in so far as we can subject the intensities, with which certain phenomena appear to us to be present in time, to rule, that this is possible. Take, for example, the case referred to already and one with which Kant deals at considerable length, how can we claim

* Cf. *Metaph. Found. of Nat. Sc.* Introduction. Also von Kreis, *Zeitschrift für wissenschaftliche Philosophie*, 1882.

objective validity for our judgment concerning the velocity of an object? We saw the difficulties which arise when we attempt to hold that our direct estimation is anything more than subjective. Now we can claim objective validity for an estimation of the magnitude of a velocity (and the quantity of velocity is intensive, not extensive), only if this takes place subject to rule. We must accordingly look upon the intensities with which phenomena are present to space and time as being the result of a "synthesis of the production of the quantity of a sensation from its commencement—that is, from the pure intuition = 0 onwards, up to a certain quantity of sensation." *

This synthesis is thus a synthesis of the homogeneous, and is so far quantitative, but does not take place in the external way which met us in the case of the synthesis of space and time under the guidance of the category of extensive quantity. In the latter case the parts retain, after the synthesis, a certain independence in relation to the whole which they go to build up, and are in a certain sense logically superior or prior to it. Now, the quantity which we have to do with in the case of intensity is not a multitude of compounded facts which have an existence prior to it. Properly speaking we cannot here speak of parts at all. Even if this be allowed us in a figurative manner, still the result differs from that brought

* B. 208.

about by the synthesis according to the moments of Unity, Plurality and Totality, in that these parts have no existence apart from and prior to the whole, but are completely absorbed in it—the whole is logically superior to the parts. It is a synthesis of coalition, not of aggregation.* We should rather look upon the quantity of the intensity of any given phenomenon as properly and firstly a unity, in which we can represent the plurality only by approach to negation = 0.† Now, the complete emptiness of time would be Negation; the filling of the time appears as Reality. But neither a completely empty time nor a completely full time, filled with a phenomenon possessing an intensity greater than which none can be imagined, can be objects of perception. What is an object of perception is always a phenomenon with a definite and limited intensity—i.e., with an intensity which has the moment of “Reality” present in it, in so far as it has a certain strength, but which has the moment of negation also present, in so far as it has only a certain and limited strength.

Degree then is really due to the operation of all three moments of the category of quality, though just as number corresponded most properly to Totality, perhaps we are correct in saying that degree corresponds most directly to Limitation, but still to this as the Unity of the other two.

* Cf. B. 201, n., quoted *supra*, p. 76.

† A. 168, B. 210.

Now our estimate of the intensity of a phenomenon can lay claim to objective validity only in so far as we look upon it as a quantity springing from a synthesis of the homogeneous according to rule—not, however, a synthesis of exterior parts to exterior parts, as was the case in the intuitions of space and time—that is, we must regard it as having a degree, and must determine this quantity or degree. In possession of this “degree” it is capable of mathematical treatment. *

Thus, to take a rather simple example of intensity,† we are able to determine that the velocity of a moving body or point is twice that of another. Though in itself this velocity is perfectly simple, we can regard it as being equal to the sum of two others. The relativity of all motion is what enables us to construct and demonstrate this. We may look upon any motion as being either that of a body in motion in a space at rest (relatively to a more absolute space), or we can regard the body as being in rest and the more immediate or relative space in motion in the opposite direction. These considerations enable us to regard any given velocity c as being the result of two others, a and b . We can regard the motion a as belonging to the particle, the motion b to the relative space, in the opposite direction, and we shall find by an appeal to the intuition of space in which

* A. 178, B. 221.

† Cf. *Metaph. Found. of Nat. Sc., Phoronomy.*

we have constructed them, that c is equal to the sum, difference or diagonal (the size and direction of the lines representing the size and direction of the velocity), as the case may be. We are thus enabled to demonstrate that the velocity is directly proportional to the space traversed and indirectly to the time occupied.

Here there is some meaning in saying that one degree or intensity is twice as great as another, since it traverses twice the space in the same time, or the same space in half the time. But even here what is finally measured is space and time, or rather space alone, since as we saw, in ultimate analysis, time-measurement reduces itself to space-measurement.* The measurement of other physical intensities—*e.g.*, Mass, Heat, Light—is not so direct and evident as that of velocity, resting, as it generally does, on conventions, the final justification of which is to be found in their success in co-ordinating the facts. But in all cases the actual measurement reduces itself in the last instance to that of portions of space.

Perhaps the most interesting example of the application of quality at Kant's hands takes place

* Further remarks are unnecessary in this place, as Kant does not discuss the question more fully. It may be permitted, however, to draw attention to the fact that the units of measure, even if they are arbitrarily fixed, possess, however, a definite and unambiguous meaning, which is more than can be said for certain units which have been proposed for the measurement of psychical quantities.

in reference to his dynamical theory of matter. Matter fills space by the repulsive forces of all its parts, by its own force of extension ; but were this repulsive or extending force alone operative then it would waste itself in expansion into endless space, and so would bring about its own destruction. Matter therefore also requires an attractive force. This attractive force, were *it* alone active, would similarly bring about the destruction of matter by making it coalesce in a mathematical point. Matter is really therefore due to the joint action of both the attractive and repulsive forces. " Now in these considerations the Real is represented by the repulsive, the Negative by the attractive force, and, finally, the moment of Limitation, which is the union of both, by the resulting determination of the degree of a filling of space." *

* Cf. *Metaph. Found. of Nat. Sc. Dynamic.* General note to the Dynamics.

CHAPTER III.

THE CATEGORY OF QUANTITY IN HEGEL: COMPARISON WITH KANT.

1. TRANSITION FROM QUALITY TO QUANTITY.

SINCE the immediate purpose of our enquiry, as far as Hegel is concerned, is with the category of quantity, it does not fall within its scope to give a detailed exposition of the stages of the Logic up to the point at which the transition from quality to quantity takes place. A short *résumé* of results may, however, be found useful. Starting from pure Being, Hegel has no difficulty in showing that taken thus in its abstractness it differs in no way—whatever difference may be *meant*—from Nothing; it passes into Nothing. This, however, taken in its abstract isolation similarly shows itself to be what Being is: so it passes into Being. The truth of both is not to be found in them when taken in abstract isolation from each other, but in their union, in the passage from one into the other, in Becoming. We have here to do not with a physical Becoming, with a change in time, but with a *logical* Becoming—which is also an intellectual element present in all physical

change. This Union of Being and Not-being which we have reached cannot, however, maintain itself, it really expresses the disappearance of both its elements, and consequently of itself. It sinks into a more immediate form, a quieter Unity, *Daseyn*, the category of *determinate* Being, containing in it the moments of Being and Nothing. Now the determination, which is what characterises Being-determinate as distinct from Being, is one with "Being-determinate," is its quality, which according as we consider it from the side of Being or Nothing, is Reality or Negation. This Reality is, however, not mere Being, but an Existing Being or Quality—a Be-ing-determinate, Something (*Etwas*), and similarly the Negation is not mere pure abstract Nothing, but a Nothing or Negation of the Something which exists over against it, Another. But there is nothing inherent in the Something which entitles it to be the "Something," and not "Another," it is only the *Etwas*, "Something," as contrasted with "Another," and similarly "An-Other" is only "An-Other" as over against the Something—it is the Other of the Something. But in itself either may be the Something or the Other (which finds expression in the Latin *aliud-aliud*). The Something must thus become Another, and here we have the intellectual element which lies at the basis of change or alteration. That characteristic in Something by which it becomes Another is its "Being-for-Another" (*Seyn-für-*

Anderes), whereas its reference to itself as against this reference to Another is its "Being-by-Self" (*Ansichseyn*). The Being-by-Self or Something then, in so far as it possesses the element of Being-for-Another "in itself, has a Limit. In so far as being positive it strives to assert itself against the Limit it is an "Ought" (*Sollen*), and the Limit then becomes a Barrier. In having a limit the "Something" is finite, but as "Ought," its essence is to transcend this finiteness, this limit, and become its other—i.e., the Infinite. The Infinite, however, regarded in this way as what is beyond the Finite, as what lies beyond the limit of the latter, is itself in so far limited by this very limit. Thus in excluding the Finite from itself it becomes itself finite. The Infinite thus becomes the Finite, whose nature it is, however, to transcend its limit and pass into the Infinite. Thus we have a ceaseless to-and-fro movement from the Finite to the Infinite and back again to the Finite, and so on *ad infinitum*. Now, both this endless movement and the Infinite, which we have been considering—i.e., that which excludes and exists over against the Finite—are not the true, but the wrong, Infinities. The truth of the Finite and this bad Infinity, as well as of the infinite progression, is the true Infinite, that which embraces the Finite in it as a moment, *in* which, therefore, the Finite exists ideally. Ideality is thus the truth of the Finite. The identity of the Finite and the Infinite is really contained implicitly, though not ex-

plicitly posited, in the Infinite progress—the bad or wrong Infinite is the other of the Finite, and the Finite is the other of the Infinite. Similarly, the Infinite in excluding the Finite becomes finite, and the Finite in excluding the Finite is also made infinite. Thus what passes over and that into which it passes over are the same, they have exactly the same characteristics; so that the Being in the passage only comes to itself. Thus the truth of the Finite and the (bad) Infinite is not to be had in their mutual exclusion, but in the unity, in which they both exist merely as moments—in “Being-for-Self” (*Für-sich-seyn*)—their truth is not their independent Reality, but their Ideality.

We have now reached the category the inherent dialectic of which brings about the transition to quantity; we must therefore consider it and the stages of its development somewhat more closely. This “Being-for-Self” is Being, but not the mere indefinite, indeterminate Being with which we began. It is on the contrary determined, and so contains negation, and is so far “Being-determinate”; but unlike “Being-determinate” it contains no reference beyond itself—the negation which it contains is not the simple negation of determinate Being, but is the negation of the reference to Other, and so the negation of the negation—the negation which is simple reference to self.* “Being-for-Self” therefore contains in

* *Werke* III., p. 165.

it the moments of Being and Not-Being, but each as in relation to itself—and therefore as identical. It is the category in which the qualitative Being reaches its perfection, in which Being and Being-determinate have come to themselves, reached their goal. “In the Being-for-Self the distinction between Being and Determinateness is explicitly posited and equated; Quality, Otherness, Limit, as well as Reality, Being-by-Self, Oughtness, &c., are the imperfect attempts to incorporate Nothing into Being, attempts which still rest on the distinction between them both. When, however, in the Finite the negation has gone over into Infinity, into the explicit Negation of Negation, it is simple relation to self, therefore in itself the equation with Being — absolute determined Being.” *

As distinct from indeterminate Being, the Being which does not stand in relation to Negation, Being-for-Self “is Being subjected to negation,” and so contains Being-determinate—Being-determinate not, however, as a distinct and independent category, and as such involving a reference to Another, a Being-for-Another, but Being-determinate sunk into being a moment in a Being which excludes all reference to Another. The Being-for-Another of Being-determinate, in so far as it exists in Being-for-Self, cannot be a reference to any other, for no other exists to which the reference could be, but must be bent back on the

* *Ibid.*, 174.

Being-for-Self—that which alone is—and so becomes Being-for-One (*Seyn-für-Eines*).*

In *Daseyn*, determinate, limited Being, whose being was limited and determined by something else, so that Something and its Other stood over against each other in seeming independent existence, the limitation of each by the other found expression in Being-for-Another. Now, however, the Finite beings have had to surrender their independence and exist as mere moments in the true Infinite, and Being-for-one expresses “how the Finite exists in its unity with the Infinite, or in its Ideality.” But our attempt thus to express the manner of existence of the Finite in the Infinite, as something distinct from the relation of the latter to itself—i.e., from its infinity—must fail, because there is not as yet present any *one* for which this Being-for-One could be. Being-for-Self and Being-for-One are not therefore to be held apart, and what God is for Himself He is only in so far as He is that which is *for Him*. The two notions must consent to be merely moments.† Just as earlier in Quality the abstract Being-determinate, when its moments had been developed and sublated, gave way to the more concrete and immediate form, Be-ing, or Something, so now the sinking together of the moments of Being-for-Self gives us the more immediate and concrete form of Being-for-Self—which (since, as we have seen,

* *Werke* III., 175-176.

† *Ibid.*, 176-7.

its inner meaning has disappeared in the indifference or identity of its moments, so that there is only one determination present, the reference of the sublation to itself), is equivalent to the One.*

The One which we now reach is different from the Something which made its appearance under Being-determinate in that whereas the latter necessarily implies a reference to Another, and becomes Another, and so is changeable, the former has no Other into which it can change, and so is unalterable. But as the negative element in Being-determinate, and therefore in Being forced us to set up an existing negative to it—i.e., Another, so the relation of the negative to itself which the Being-for-Self or the One contains must also be posited—and to this Nothing Hegel gives the name of the Void.†

The Void, however, is as much relation to itself—i.e., as much Being-for-Self as the One. Thus the One becomes many Ones. This process by which the One resolves into many Ones Hegel calls, somewhat figuratively, Repulsion.‡ We have not as yet, however, quite got the possibility of

* *Werke* III., 181-2.

† *Ibid.*, 183-4.

‡ *Ibid.*, 186-7. I cannot help thinking that the choice of the names the Void, Repulsion and Attraction, was not altogether fortunate. The Void is apt to suggest the empty space of the atomists, an impression which the criticism of Atomism, which immediately follows, does not tend to remove. It may be indeed that in these categories we have the conceptual groundwork of Atomism, nevertheless the terminology is misleading. It is

quantity, though we are close on it. We have, it is true, many Ones, but each of these is related to itself, it has nothing to do with the others. We are thus not as yet in a position to say that these units, which we have got, can be united into one. The Repulsion, which called the many Ones forth out of the One, now becomes a reciprocal Repulsion or a mutual Exclusion. This simply means that unlike "Something" which had it in its essence to refer to Another than itself, each of the many Ones has no external relation, it is related only to itself. But this character of Being-for-Self, of being One, is common to all the many Ones, so that they are all one and the same. Thus the Repulsion, according to which the many excluded each other, and had no interrelation, is shown to involve its opposite—viz., Attraction. "When we study all that Repulsion involves we see that as a negative attitude of the many Ones to One Another, it is just as essentially a connective reference of them to each other ;

interesting to note that, whereas when the early Greek philosophers held that "Not-being" did or did not exist, what they meant was empty space, when Hegel speaks of the Void what he means is an existing non-being. Similarly Repulsion and Attraction are liable to suggest ideas which belong to a more advanced stage in the dialectic. Such concrete expressions tend to show that Hegel, even in the development according to the pure inner dialectic of the idea, had always in mind the "concrete" use to which his categories were to be put. Whether this is a circumstance which should throw doubt on the claim that the dialectic advances through absolute inherent necessity, cannot be decided here. One effect undoubtedly is to mislead the reader, and sometimes perhaps Hegel himself.

and as those to which the One is related in its act of repulsion are Ones it is in them thrown into relation with itself. The repulsion has therefore as much right to be called *attraction*, and the exclusive One or Being-for-Self suppresses itself." * The tendency then of this moment would be to resolve the many Ones again into one One, but in so doing it would at the same time destroy itself. On the contrary, as usual, the truth is to be found neither in Repulsion nor Attraction, considered in their isolation, but in the insight into the fact that each is necessary to the other. †

In Being-for-Self and the One, Quality had reached its highest point, but on the appearance of Attraction, the One loses its exclusiveness—i.e., loses its Quality as Being-for-Selfness. We have

* *Encyc.*, § 98. Cf. *Werke* III., 190-192.

† Cf. *Werke* III., 194-198. Kant (*Met. Found. of Nat. Dynamic*) similarly showed the mutual necessity to each other of the two forces out of which he "dynamically" constructed matter; but, as usual, this deduction was made with reference to sense perception and its conditions. Moreover, we must keep in mind that Kant was dealing with *forces*, whereas the names Repulsion and Attraction, as here employed by Hegel, are highly figurative. This, however, does not prevent him, on the strength of the position he has now reached, from indulging in a criticism of Kant's doctrine and mode of procedure in this respect. The truth, however, is that Hegel's Attraction and Repulsion have very little in common with Kant's similarly named two primary forces, and the attack seems to me to illustrate how Hegel was himself misled by his own terminology. In addition to this the criticism, in more than one point, actually misrepresents Kant's views.

thus come to the suppression of quality, and we have present a multitude of Ones, which can be united into one whole—so far the influence of Attraction—but do not disappear in this whole—so far the influence of Repulsion. In the union, therefore, which we have reached, of Repulsion and Attraction, the transition is made from quality to quantity.

The contrast between this method of deducing quantity and Kant's is very apparent. Here we have a consideration of the pure notion in and for itself, without any admixture of extraneous sense-elements. We move the whole time in the world of abstract thought—where indeed, perhaps, we may find some difficulty in breathing—without any explicit reference to the function which these thought-forms fulfil in experience. With Kant, on the contrary, the possibility of the category of quantity was shown entirely with reference to its necessity for the formation of our ordinary everyday experience. Even if we hold, against what I have urged above, that Kant arrived at his pure categories, their number and order, by means of their "metaphysical deduction" from the Table of Judgments of Formal Logic, yet it must be acknowledged that this "deduction" plays a very small and comparatively unimportant part in the positive determination of what is essential in Kant's doctrine. Even on such an interpretation the backbone of the work is still the transcendental deduction and the investigations into the Principles

of the Understanding, where he shows the inner necessity of Quantity and quantitative ideals and methods to the very constitution of Experience. This is what is characteristic of Kant just as the Dialectic is of Hegel. In Hegel each step in advance is made through a consideration of what is involved *for pure thought* in the notion already reached; with Kant, on the contrary, pure thought can do nothing, as far as advance in theoretical knowledge is concerned, and each step implies a constant reference to the one sufficient touchstone, the one possible criterion—the possibility of experience. It may be urged that, granted the transcendental deduction, Hegel's system of categories and his exposition of them would seem to supply the place of the metaphysical deduction. This is no doubt true, and it is probably in this light that Hegel himself would look upon his relation to Kant in this respect. But, as I have tried to show, the metaphysical deduction forms a very unimportant and ill-fitting portion of the Kantian doctrine, and its place is easily supplied—and in accordance with the whole spirit of his philosophy—by the Exposition of the Principles of the Understanding.

For Hegel, as well as for Kant, the categories of quality and quantity, as well as all the others, have validity for the world of experience—for him there is, indeed, finally no other world in the sense of a Hereafter, a Beyond-world—but owing to the presuppositions with which he started he

does not think that this needs proof.* Yet here too there is, perhaps, a difference. Kant looked upon his categories as the necessary binding-stays of experience, they held the given of sense together. For Hegel the function of thought—even the most abstract and least developed—is to a certain extent to *rethink* the given of sense, in a certain sense to transform it; and in this respect the advance to ever higher forms means that we must endeavour to “rethink” the stage passed over in terms of the new notions at which we have arrived.

Now, in Kant also we can, as I have pointed out, find a certain and definite order among his categories; he has not grouped them together in the haphazard manner that a cursory examination might suggest. But there is no development in the sense of the necessary passage from one stage to that next above it. The categories, though exhibiting a certain difference in complexity take their place *beside* each other, all equally justified as far as validity is concerned. The development in the Hegelian logic, however, the advance to ever higher stages of rethinking, means

* Cf. *Encyc.*, § 6. Though thought is the essence of the world, yet we must constantly bear in mind that for Hegel Logic does not consider objects in their concreteness, but in perfect abstraction (cf. *Werke* III., p. 14). It is the world of shades (*ibid.*, p. 47) and its forms, considered apart from their realisation in the world of nature and spirit, may be called empty, though the important thing to remember is that the content which they receive in the world of mind is nothing foreign and external to it, as was the case with Kant (cf. *Encyc.*, § 43 n.).

the sublation of the lower stages. Thus we find that quantity is sublated * determinateness or quality.† And whereas in Kant the categories themselves were the main considerations, and their order and development, so far as it existed at all, only very secondary; for Hegel the development and systematisation is what is, perhaps, of primary importance; and beside it the categories tend to become secondary. For, though the Logic was also meant to be a system of thought-forms, in which each had its proper place assigned to it, so that there would be established a means of evaluating the sciences and scientific and philosophic doctrines, yet its main purpose was to form an adequate expression for the Absolute. We need not therefore be surprised to find a somewhat exaggerated elaboration of categories and of transitions from one to another in Hegel in comparison with the fewness of Kant's categories and almost entire lack of transition. The transition to quantity which we have just been dealing with, and which we have only given in very abbreviated form, illustrates this careful graduation of stages; the passage to Measure will afford another good illustration.

We have already dealt with the relative positions of quality and quantity for both philosophers, and have suggested that the divergence, which we

* And at the same time preserved, as a moment.

† Cf. *Werke* III., 209, 390.

find here, is to be explained by a reference to a difference in their general purpose, point of view and method. Kant's categories are considered with more explicit and definite reference to their use in experience than Hegel's. Another apparent contradiction may also be explained in much the same way. We saw that Kant holds that from mere notions alone it is impossible to see how a thing can be of the same sort with many others—that is, can be a quantity—for this we must appeal to experience and to its *a priori* condition or form, space. Now we have just seen Hegel deducing the necessity of quantity, and this out of consideration of pure notions alone. Yet here, notwithstanding the great divergence in views and aims expressed, a contradiction is, however, not necessarily involved—though it is probable that neither would regard with much approval the proceedings and methods of the other. For what Kant has to show is the possibility of quantity as a *real* category—*i.e.*, to show how it is possible that a category which makes such a demand as that “one thing should be of the one kind with many others,” can have any meaning—*i.e.*, can have any object to which it can apply. Thus he was concerned to show, not how such a demand could be made, but how it could be satisfied, how it could have any objective application. Now, Hegel had not to try to deduce this reality of the category, he had simply to show how we must arrive at the thought-form itself. How it was to

find an object corresponding to it was not his task to answer, nor did he try to demonstrate it *a priori*.

But though Hegel's categories have an application in the world of sense, even understanding this in the same way in which Kant did, yet in their character as forms for rethinking the world they have another and for Hegel a more important signification—they are expressions for the Absolute. Thus in the sphere of quality which we are just leaving behind, we find such expressions, which have in the course of history, each in its turn, been looked upon as if it were sufficient and adequate to that purpose. Such are Being (of the Eleatics), Nothing (of the Hindoos), Becoming (of Heraclitus). The most adequate expression, however, to be found in pure quality is Being-for-Self and the One, and this because it is a rendering of the true Infinite. For with Hegel the Infinite does not mean the endless, the indefinite—this is the wrong Infinite—but the Being which is determined and rounded off in itself, which is limited by no other than itself. True, the Being-for-Self is but a very abstract expression for the Spirit and God, yet it is the highest we can reach in the sphere of pure quality. The transition from quality, therefore, means, in this respect, that no adequate expression for the nature of the Absolute can be found in it. Now all these considerations, so characteristic of Hegel, are utterly foreign to Kant. For the latter the categories are valid only in their function of synthesising the given of

sense, and the world so got cannot be looked upon as in any degree expressing the Absolute or noumenal, in reference to which, therefore, the categories have no validity—such a transcendent use of them would be utterly illegitimate. A change from one category to another could mean for him nothing more than simply a difference—depending on the difference in character of the given content—in our ways of unifying or synthesising the given of sense, whether on its material or on its formal side.

2. CONTINUOUS AND DISCRETE QUANTITY AND LIMIT.

The passage from quality to quantity took place when we had got not only the many Ones, but the equality or unity of the moments of Attraction and Repulsion. The Being-for-Self then became “absolutely identical with its Being-for-Another”—all the many ones were qualitatively the same, each was equally what every other was. The Limit therefore which divided the Being-by-Self (*Daseyn*) from its Being-for-Another ceased to be a limit. If, therefore, quality is the first immediate determination of Being, quantity is the “Determination which is become indifferent for Being.” And this is the notion which lies at the foundation of the mathematical definition of quantity as that which may be increased or diminished. This means that we are here dealing with a Determination of Being which is such that

it may be altered whilst the Quality of the Being itself remains unchanged. If we pass over the Limit in the sphere of Quality the Something becomes Another—i.e., changes or alters, but this is no longer so here, and we now meet the case of the Something being indifferent to its determination and its Limit. "Such a Limit, its indifference in itself and the indifference of the Something towards it, is exactly what constitutes the quantitative determination of the Something."*

But the mathematical definition,† as well as "Magnitude" itself, refer rather to determinate quantity—i.e., quantity with a limit, and we have not as yet reached that stage. We are yet in the region of pure quantity, and we have now to consider what is involved in it. Quantity was due to the union of Attraction and Repulsion. These, in so far as, in the transition to quantity, they lose their independence as categories, become mere moments. In their independence the idea of Becoming was prominent in them, the One *became* the Many, and under the influence of Attraction the Many tended again to become a Unity. Now, however, with the transition from the last stage of quality to pure quantity they lose this characteristic of change and become respectively Continuity and Discreteness. "Con-

* Cf. *Werke* III. 209-211. *Encyc.*, § 99.

† "Mathematics usually defines magnitude as what can be increased or diminished." *Encyc.*, § 99.

tinuity is thus simple reference to self which possesses the characteristic of selfsameness, and is broken by no limit and no exclusion. But it is not immediate Unity, but Unity of the Ones which have Being-for-Self.”* The absolute sameness then of the Ones contained in quantity, the fact that there is no distinction, no limit between them, is what lies at the basis of Continuity as a moment in Quantity. But this unity is at the same time no mere abstract Unity in which all difference is lost, it is, on the contrary, a Unity of the many—so that Discreteness is quite as necessary a moment as Continuity.†

Owing to the immediate character in which pure quantity as the first member of a new trilogy is presented, these moments come out of it, as it were, and appear as independent. Thus quantity must be explicitly posited in turn in the form of Continuity and Discontinuity. The *whole* of quantity then looked at as the unity of the elements contained in it assumes the form of Continuity.‡ But similarly the *whole* of quantity may be looked upon as discrete. In the one case the unity, the similarity and identity of the Ones is emphasised; in the other their existence as *Ones*—i.e., their

* *Werke* III., 212.

† *Cf. Werke* III., p. 213. “On account of this sameness [of the many ones] this Discreteness is unbroken Continuity and on account of their self-transcendence this Continuity, without being broken, is manifold.”

‡ *Cf. Ibid.*, 229.

separateness and distinction from each other. It is therefore wrong to say that quantity is merely continuous, or merely discrete, or that there are quantities some of which are continuous and some discrete. The truth is that all quantity and every kind of quantity is both continuous and discrete. Thus a line regarded as a unity may be looked upon as a "continuous quantity," but looked on as capable of being divided, or as divided, it is discrete. Similarly a hundred men may be looked on as a discrete magnitude in so far as we regard them separately ; " but they are just as much a continuous magnitude, and the circumstance in which this continuity depends is the common element, the species man, which pervades all the individuals and unites them with each other."* " Continuity and Discreteness must not therefore be looked upon as two distinct species of magnitude, as if the characteristic of the one did not attach to the other. The only distinction between them is that the same whole (of quantity) is at one time explicitly put under the one, at another under the other of its characteristics."† Both moments are really contained in every quantity, the difference being as to which of the moments is explicit and which only implicit. ‡

As usual the truth is not to be found in either moment held apart and considered by itself, as if it could exist in isolation from its other—but in the union of the two. The truth, therefore, of

* *Encyc.*, § 100 note. † *Ibid.*, § 100. ‡ *Cf. Werke* III., 230.

pure quantity is to be found in the union of Discrete and Continuous Quantity, just as the truth of pure Being was found in the union of Being and Nothing—Becoming, or in more immediate form, Determinate Being. But the unity of Discrete and Continuous magnitude gives us definite quantity or quantum, though this as usual appears first in a less immediate form which Hegel calls Limit.* Let us see how this comes about. It may become somewhat clearer if we take the case of a more concrete realisation of the idea of pure quantity, Space. Here Continuity represents the self-sameness and absolutely unbroken connection with each other of all parts of Space ; considered from this point of view it is easy to see that what we have before us is the indefinite, infinite, or rather endless Space. Continuity is thus not sufficient. But neither can Discreteness alone give us what we want. This is first assured when we have divided off from the whole infinite space a certain portion. Now, it is the element of discreteness, according to which we look upon space as being composed of a number of parts which enables us thus to stop, as it were, at any definite place, and there mark it off from the one all-embracing space. Now, the Limit is what marks off the definite from the indefinite and constitutes it a definite portion of space.† On referring back

* Cf. *Werke* III., 231.

† Cf. Kant's remarks on the infinity and limitation of space.

to Kant's exposition of this matter, the Continuity of Hegel, as becomes quite apparent in his example of the hundred men, quoted above, represents the Unity of Kant. Thus in "All men are mortal," the moment of "Unity" was represented by the general conception "man," But this did not as yet give us the possibility of definite quantity or number. For this the element of Plurality was also necessary—represented in Hegel by Discreteness. Now, finally, from the synthetic union of these two moments the idea of number (represented, as we saw, by Totality) or definite quantity emerges. That is, out of the indefinite and unlimited sphere supplied by the Unity or Continuous element, we were able by means of the moment of discrete Plurality to cut off a certain definite quantity. The unity then of Discreteness and Continuity gives rise to the Limit which distinguishes the Discrete magnitude from the indefinite Continuous.

These considerations may help us to understand Hegel's transition from pure to definite quantity. "Discrete magnitude has, firstly, One as its principle, is secondly Plurality of Ones, and is thirdly essentially restive ; it is the One as sublated (and preserved as a moment), as Unity, the self-continuation as such of the Ones in their Discreteness. It is therefore explicitly put as *One* magnitude, whose determinateness is the One, which in reference to this explicit putting and Being-determinate is exclusive One, in reference to the

Unity, is Limit." Discrete magnitude as such in its immediacy possesses no boundaries ; but as distinct from continuous magnitude it is a Being-determinate, a Something, the determinateness or quality of which is the One, which as is natural in the case of a Being-determinate, is thus also first Negation and Limit." * Thus we see that from the element of Discreteness alone, considered in isolation by itself, we could get no Limit. It is only when we consider the two as united, and yet as distinct, that the Limit makes its appearance. But what does Hegel mean by saying that the Limit is the One ? This may become clear if we remember that the Discrete quantity is the many Ones considered in their separateness. Now, suppose we have, in our passage from one to the other of these, which is indeed a continuous process since they are all alike, chosen to stop at any one, as their discreteness allows us do, we have thus cut off from the infinite, or rather endless and indefinite a certain definite quantity, and the one at which we stop is what forms the boundary, the Limit. Thus of a hundred the hundreth is the Limit, cessation at this point is what makes it into a definite quantum.

It is not difficult to see that in many of the details which we have been considering Kant and Hegel are essentially at one. Hegel's moments of Continuity, Discontinuity and Limit are in the

* Hegel, *Werke* III., 231.

main equivalent to Kant's Unity, Plurality and Totality. The Continuity of the one just as the Unity of the other is due to the same fact that the Ones are regarded as identical. The Plurality, which is not definite, which does not possess its limit in itself, as is seen in the progress to infinity, is in last analysis the same moment as Discreteness. It is, perhaps, the case that the Limit is not an exact parallel to Totality—yet they both express the result of the union of the other two moments, and their similarity appears more clearly when we compare Totality with the more immediate form of the Limit—Number.

There is, however, as usual a difference in method. Here as elsewhere it is the old one, between pure conceptual elaboration of notions on the one hand, and reflection with a constant regard to experience on the other. Even the very derivation of the separate moments of the Kantian Category of Quantity was conditioned by the character of the matter to which they had to be applied. It is not necessary to insist further on the contrast of this with Hegel's method. The latter's whole endeavour is to evolve the pure thought-elements, show them to be insufficient, and pass on, driven by necessity of reason, to the next and higher stage. Kant's main problem was to show how considerations of quantity could claim to have validity for experience.

I have tried to show * that the three subtitles

* *Supra*, Kant's treatment of this question, p. 96.

under the head of quantity had not for Kant that independence which at first sight they might seem to have. This characteristic is much more evident in the case of Hegel. This difference is, of course, natural. The demonstration of this lack of independence on the part of the categories was necessary for Hegel's main task, the advance to the Absolute idea ; whereas none of the objects which Kant had set himself would tend to make him emphasise it. But, as usual, the great and essential difference is that, according to the critical philosophy, the Categories of Quantity, like all the others, could have no application to the noumenal ; Hegel regards them as expressions, however inadequate, of the Real. " The point of view that the Absolute is pure quantity is upon the whole the same as when it is defined to be matter, in which, though form undoubtedly is present, the form is a characteristic of no importance one way or another. Quantity too constitutes the main characteristic of the Absolute, when the Absolute is regarded as absolute indifference, and only admitting of quantitative distinction." * Quantity remains one of the moments even in the Absolute Idea, though, it is true, a very much " transcended " moment. In the world of nature, whose essence it is to be other than the idea, considerations of quantity are relatively important, they become less so as we look upon the world from the side of the organic, and still less so from that of the spiritual categories.

* *Encyc.*, § 99.

3. NUMBER, MATHEMATICS.

(a) *The Category of Number.*

We saw that quantity differed from quality in being indifferent to its limits. "But this does not imply that it is indifferent to it to be a limit or quantum." * This means that though the characteristic of Magnitude is to be indifferent to its limit, and so be capable of increase or diminution without ceasing to be a Magnitude, still that Limit and definite quantity or quantum must make their appearance in the course of the Dialectic, has been demonstrated. Quantity must appear as quantum, though as *what* quantum cannot be decided, and is indifferent as far as quantitative considerations are concerned. The One as the Limit is, as we saw, the principle of quantum. This One, however, is not the One of quality, but the One of quantity—i.e., it is *Unity* as a portion of the quantum.† It might seem that the hundredth alone is the limit which encloses the many ones, and in a certain sense this is so; but then none of these hundred units has any advantage over the others, so that each is really the hundredth, they are all hundredths.‡ Thus we see how we arrive at the three characteristic marks of the One as Limit §—(a) reference of self to self, since what the hundredth

* *Werke* III., 233.

† *Ibid.*, 233.

‡ *Ibid.*, 234.

§ *Ibid.*, 233.

really relates itself to is also a hundredth ; (b) self-comprehension, as embracing and shutting in the many units which are the same as itself, and (c) exclusion of others in so far not only as it separates what is over the hundred from the units contained in it, but also in so far as it shuts out from itself and the other ones of the hundred its "Other," refusing to be anything else than a hundredth.

"Quantum put with full explicitness in these determinations is Number." Continuity was the form of Indefiniteness. Now, however, with the imposition of the Limit as the connection between it and Discreteness, we have a definite manifold. Whereas quantum as such was only limited in a general way, so that its limit is abstract and simple, the limit is now explicitly put as being manifold (as we have explained in the example of the hundred). We have, therefore, as the moments of Number, Unity corresponding to Continuity, and Amount corresponding to Discreteness. Limit appears both in quality and in quantity, but there is a characteristic difference between them. In the former the Limit permeated the Being-determinate and gave it its characteristic, made it Finite. In the latter case, however, the Limit depends on its multiplicity of units instead of *vice versa*. They can do without it, but it cannot do without them. It is the Amount which constitutes a Number—a two, a ten, a hundred.*

* *Werke* III., 233-234.

Unity, Amount and Number seem to represent more closely than do Continuity, Discreteness and Limit, the three Kantian moments of Unity, Plurality and Totality. The question is not, however, of very great importance, since the only difference between Unity, Amount and Number, on the one hand, and Continuity, Discreteness and Limit on the other, is only one of greater or less immediacy, of more or less independence of the separate moments. However, the comparison of Continuity, &c., with the Kantian categories serves to bring out more clearly the true relationship between the two systems as well as between the motives leading to their adoption.

It would seem that in the treatment of Number, if nowhere else, we come upon a glaring contradiction between Kant and Hegel in their statement of doctrine. For Kant Number is rather a product of the imagination, working, it is true, under the guidance of the Understanding, than a pure thought-element; whereas for Hegel it is one of the necessary stages which must be passed through in the progress to the Idea. In the one case it is stated that we cannot understand its possibility from mere Reason, mere conception alone; in the other we see it evolved from pure thought-elements, without any admixture of sensation or intuition whatsoever. But I think that even here a little consideration of what is really involved will convince us that this contradiction is more apparent than real. For Kant, Unity, Plurality and Totality,

as pure categories, were not numbers, and for Hegel Number and its moments gives us the intellectual foundation of number and counting rather than these concrete products themselves. We have simply arrived at the stage at which we are able to understand and also pass judgment on number, arithmetic, and the arithmetical conception of the universe. But number and arithmetic themselves are not pure thought-products, and when we come to consider Hegel's treatment of them we shall find that his difference from Kant consists in making these operations more, rather than less, mechanical and dependent on sense.

(b) *Mathematics.*

Having determined the characteristics and moments of Number, Hegel proceeds to consider the several kinds of operations with which Arithmetic is concerned. But in this connection a word of warning is necessary. These arithmetical operations and their investigation do not belong to the dialectic itself, they are not "deduced" in the same way, as for instance, the Category of Quantum or Number; they are not, strictly speaking, deduced at all, at least not from pure notions. What we have is rather a systematisation of the arithmetical ways of reckoning or calculating (for as we shall see this is what they all come to); under the guidance supplied by a consideration of Number and its moments. The standpoint in

pure Reason which represents them is deduced, just as afterwards in the Doctrine of the Notion the standpoint of General Laws of Nature is deduced. But as in this latter case Hegel does not *deduce* the laws of nature in detail, but only *that* there are such, so now he does not attempt from pure reason to deduce the divisions of Arithmetic, either as regards their form or content. Thus, even if Hegel's analysis of these processes, as well as his description of the essence of their methods, should prove inadequate or incorrect, this in no way interferes with the value of the Logic, as far as its main or even its subordinate purposes are concerned. It would still be valid as a representation of the Absolute, the Real, and would still enable us to pass judgment on the ultimate value of numerical and arithmetical considerations as giving an expression, however inadequate, of this Absolute. If it be granted that arithmetic has to do with number, then when we have transcended the Category of Number, which represents its standpoint, we see that any attempt to represent the essence of the Real in terms of it must be regarded as inadequate, and this independently of any views which Hegel may have as to the essence of the arithmetical procedure.

The principles, then, according to which we are to try to systematise the several kinds of mathematical operations, must come "from the characteristic elements in the notion of Number itself.*

* *Encyc.*, § 102.

These, as we have just seen, are Unity and Amount. "But Unity when applied to empirical numbers is only the equality of these numbers; hence the principle of arithmetical operations must be to put numbers into the ratio of Unity and Sum (Amount), and to elicit the equality of these two modes." This is, however, not a process like the dialectic of the moments themselves, but, since the characteristic of Numbers is to be indifferent to each other, the operation is something which must be performed on them from without. "In this Relating (of Numbers) consist the species of calculating."* "To count or to calculate is then to tell on number to number, and the difference between the kinds of calculation lies only in the qualitative constitution of the numbers which are told together."† The only difference of qualities of numbers with which we are here concerned are Equality and Unequality, which are characteristics belonging not to the numbers themselves, but come to them from outer comparison. Moreover, since numbers can be produced in two ways—either by putting together or by splitting up—we get two subdivisions, as it were, for each species of calculation, the positive and the negative.‡

"The first species of calculation is numeration. It is this which enables us to create or make a

* *Werke* III., 236.

† *Encyc.*, § 102.

‡ *Werke* III., 237.

number at all—it is a colligation of as many units as we please.”* Thus, by grasping together the many into a unity, by making the amount, which in each succeeding case is synthesised into unity, greater by one than that preceding, we get the natural series of numbers. “Since the Ones stand to each other in a relation of externality, they are represented by means of a sense-picture, and the operation, through which number is created, is a counting off on the fingers, &c. What ‘four,’ ‘five,’ &c., mean can only be ‘pointed out.’”†

Now, when the numbers we have thus got are unequal the further colligation of them is addition, or on the negative side, subtraction. When, however, the given numbers are equal, but are themselves unequal in number, we get multiplication, or on the negative side division. When the numbers are both equal as units and equal in number we get Involution. ‡

It is not necessary to enter into a more detailed exposition of these topics, once we have recognised their principle, and seen that they really do not form stages in the dialectic of the Idea. It may be well, however, to notice an attack on Kant which Hegel, following a too frequent custom of his, takes the opportunity of introducing here. Kant had held that the judgments of Arithmetic like “seven plus five is equal to twelve,”

* Cf. *Encyc.*, § 102.

† *Werke* III., 238.

‡ Cf. *Encyc.*, § 102. *Werke* III., 238–245.

and of geometry as "a straight line is the shortest distance between two points" are synthetic *a priori*, not analytic and not *a posteriori*—i.e., derived from experience. The difference between the two philosophers is not in the direction which one might at first expect; it does not consist in an over-emphasis by Hegel of the part played by the pure reason in arithmetical and geometrical operations. On the contrary, his tendency is rather towards denying any notional activity whatsoever in forming and assenting to such judgments. At best they are merely analytical. To Kant's assertion that "One would at first think that it ($7 + 5 = 12$) is a mere analytical proposition," he adds the parenthesis "certainly!"* Further on we read:—"The sum of seven and five is simply the union of both numbers, a union in which, however, the notion or concept plays no part. This non-conceptual numeration, continued from seven on till the five are gone through, may be called a synthesis in the same way as the numeration starting with *one* might be so called—a synthesis, if you like, but a synthesis which is entirely analytical in its nature since the connection is entirely artificial."† The point of the objection seems to be that "seven" and "five" are really no notions. This is true in the sense that they are not pure productions of thought, like the cate-

* *Werke* III., 239.

† *Ibid.*

gories ; but Kant is quite as clear on that point as Hegel. Yet it is not easy to see how the latter can deny that, though not themselves pure thought-elements, they are constructions in the intuition or imagination under the guidance of the categories. Even for Hegel himself do they not seem to come under " Number," one of the moments in the pure dialectic ? The necessity for appealing to fingers and points, to which he draws attention, is only a repetition of Kant's own words,* and only establishes the non-analytical† character of the whole operation. But then the question remains for Kant, how can we claim universal validity within the sphere of experience for this ? It is in this that the whole brunt of the battle lies for Kant ; were it not for this such judgments or operations would no more require examination and justification than ordinary *a posteriori* judgments derived from an analysis of our perception or intuition. Yet it is precisely this point of view which did not present itself to Hegel as being of any particular interest. Hence the origin of this whole attack, which, like many others of a similar nature, springs not out of a real contradiction in the particular doctrines treated, but out of a difference in fundamental aims and interests. The important point always to bear in mind, when treating of Kant's attitude towards Mathematics, is that his pur-

* Cf. B. 299.

† In Kantian sense.

pose was not to give a complete philosophy of this discipline, with a careful examination of the elements which go to compose it, but to show how ordinary elementary Mathematics could justify its claim to universal validity in reference to the world of sense-experience. Thus, when he states that his task is with pure, not with applied, mathematics, we must understand this as an indication that he is not going to investigate the particular means and methods by which the doctrines of geometry and arithmetic should be applied to experience, not as implying that he wishes to exclude all reference to experience and the general validity of mathematical judgments for it. To give a philosophy of pure mathematics as pure—*i.e.*, as having absolutely no reference to experience—was not Kant's main task; what he did was to show how pure mathematics could claim validity for experience. But although we may be tempted to doubt the value of Hegel's criticism of Kant on this question, yet it must be granted that he has expressly called attention to a characteristic of arithmetical and geometrical procedure which Kant had left somewhat in the dark—namely, the "external" character of mathematical processes and operations, as well as of notions like equality, difference, &c., in relation to the content to which they are applied.*

Nor does it seem to me that Hegel's attack on the

* Cf. *supra*, p. 76, n. Also *Werke* III., 236. Also *infra*.

Kantian geometrical doctrine is in any way more successful. He attempts to show that the judgment "a straight line is the shortest distance between two points" is really analytical, not synthetical. This he does by arguing that since the spacial element is already involved in the idea of a line, straight means simple, and in cases of quantity simple means smallest, so that the judgment is really analytical. But as these doctrines of Hegel do not seem to me to be in any sense a necessary portion or link in his method or his system, I do not think it necessary to deal further with the points here. Before leaving this subject, however, I may compare Hegel's attack here on the notion of number, where the idea is in a certain sense "outside" itself, with his attitude in that other sphere of "Externality," "the world of nature," where he seems to adopt an attitude of hostility towards experience, an attitude not at all essential to his system, but one which has led to its being often misunderstood.

4. DEGREE.

"The Limit (in a quantum) is identical with the whole of the quantum itself. As in *itself* multiple, the Limit is Extensive magnitude; as in *itself simple* determinateness (qualitative simplicity), it is Intensive magnitude or degree." * The distinction here mentioned is to a certain

* *Encyc.*, § 103.

extent similar to that between the continuous and discrete quantities, but differs in finding its application not to the general notion of quantity, but to quantum, or what is the same thing the quantitative limit. The distinction arises through the Limit being put alternately in its moments of Amount and Unity. In so far as the Limit is regarded as a multitude, as a synthesis of many ones, it is an extensive quantity ; in so far as the moment of Unity is emphasised intensive quantity arises. In both cases there is a unity of the many, otherwise there were no quantum. When the Limit is " put " first in the moment of Amount, consideration shows the necessity of transition to its opposite. This manifold of the Limit is in itself homogeneous, each is like every other, and so the many is " continuous." The result is that the many sinks into simple unity, and " the externality, which constituted the Ones of Plurality, disappears in the One as the reference of number to itself. The limit of the quantum, that as extensive had the Determinateness of Being-determinate, as the self-external Amount, passes, therefore, into simple determinateness. In this simple determination of the Limit it is intensive magnitude, and the Limit or Determinateness, which is identical with the quantum, is now also explicitly put as simple—Degree." *

The Determinateness of Degree must, like other

* *Werke* III., 253, 254.

definite quanta, be expressed by means of a number, but instead of the cardinals we must here use the ordinals. The quantum, which has 20 Degrees, is the 20th Degree, not the Amount and Sum of these.

There is yet another difference between extensive and intensive quantity, which it may be well to call attention to. We saw that quantity is indifferent towards its limit; externality in fact belong to its very essence. Extensive quantity is numerical Plurality, and so has this externality within itself—i.e., between the different ones. In so far as in extensive quantity Amount is sublated (and preserved as a moment) this inner externality passes away, and instead we are given the relation of the Number as degree to other Numbers as degrees. “The consequence is that the Degree is simple quantitative determinateness under a severality of such intensities, which are different, each being simple reference to self, but are at the same time in essential relation to one another, so that each finds its determinateness in the fact that it is in continuity with the rest. This reference of degree through itself to its Other renders ascent and descent in the scale of Degrees a continuous process, a flux that is an uninterrupted indivisible alteration.” *

But though thus distinct, extensive and intensive quantity mutually involve each other—they

* *Werke* III., 255.

are distinct, but inseparable. The Degree is One, but not the indefinite One, the principle of Number in general, which excludes Amount. On the contrary the Degree is determined, and that in two ways—firstly in relation to its Others, the other Degrees, so that, for instance, the twentieth Degree is determined by its position in the scale relatively to the nineteenth and the twenty-first; secondly, in reference to the Amount of which it is the Unity. In Extensive Quantity the essential element is that the Discreteness of the twenty is emphasised, yet these Ones are also present in the Degree, though as continuous. “Extensive and Intensive Magnitude are therefore one and the same determinations of quantum; they are distinguished only by the fact that one has the Amount as within it, the other as without it.”*

This account of the relation between Extensive and Intensive quantity bears a resemblance in some respects to the Kantian. Both philosophers seem to dwell on the fact that the distinction between these two species of Quantity is due to a difference of emphasis laid, in turn, on each of the two moments (Unity and Amount), which go to constitute quantity. But whereas in the case of Hegel it was this distinction that, as it were, created the categories, it is used by Kant merely to characterise them, whilst his adoption of them was due

* *Ibid.*, 256.

to other considerations—namely, their necessity for explaining the possibility of experience. Kant, no less than Hegel, holds that every object has both extensive and intensive quantity. But for him this union is not due to any inherent connection which a rational examination may reveal, but to the fact that every object of experience contains, as an object of sense-perception, both form in the shape of space and time, and matter in the content of sensation. That he, as well as Hegel, holds that the intensity of a phenomenon can be expressed in terms of extensive quantity is not due to the fact that he thinks that both notions mutually involve each other; indeed, as far as this goes, the two are distinct kinds of quantity—but that for an objective estimation of intensity the possibility of such translation is necessary. Thus, notwithstanding all seeming similarity of the results, the methods of the two philosophers remain characteristically different. Even in the points in which they seem to agree there is a difference—a difference due to this difference of method. Both believe in the Inseparability of intensive and extensive quantity. Now, for Hegel this is due to the very nature of quantity itself, so that *all* extensive quantity, and therefore even space and time magnitudes must, at the same time, be considered as intensive and *vice versa*. With Kant such a complete identity of the two species of quantity cannot take place. For him Degree and intensive quantity

have distinct reference to intensities of phenomena.* For Hegel this is not so, and perhaps may illustrate, in a small way, the, at times, misleading character of his terminology. I may further remark that though both philosophers advert to the connection between intensive and extensive quantity, yet neither sufficiently investigates the presuppositions involved in the claim to be able to express intensive in terms of extensive quantity.

5. THE INFINITE.

We have seen already that quantum was indifferent to its limit; as quantum it was bound to have a limit, but there was no reason why it should have any one rather than another; we have therefore here a "determinateness which is quite as much the Negation of itself. This distinction is developed in Extensive magnitude, but Intensive magnitude is the Being-determinate of this Externality, which Quantum is within itself."† This means that the Externality of quantum was already contained in extensive, but that it first becomes clear in intensive quantity, and this because Degree as a One owes its determinateness to its relation to Other Degrees. The twentieth Degree is on one side determined by the twenty-first; this again, however, by the

* They are, indeed, not the category, but the results of its application (*v. supra*, p. 184 *seq.*).

† *Werke* III., 261.

twenty-second, and so on to infinity. The reference to another in which it is to find its determinateness is here explicitly and definitely put, we not only *can* go beyond any definite quantum but we *must*. We thus pass over into the category of the Infinite quantity, the third chief division under "Quantum"; "Number" being the First, and "Intensive and Extensive Quantity" the second.

It thus lies in the very nature of quantum to alter, to pass its limit, and indeed to pass all limit, for its determinateness and limitation is due not to itself, but to its other. But herein lies a contradiction, since it is of the very essence of quantum to have a limit. The negation of the limit in the quantum gives rise to the infinite quantum. But infinite quantum is a contradiction in terms. Of this contradiction the "infinite progress" is the expression, not the solution. At its face value quantum is definite, but the general characteristic, the externality of all quantity, which is explicitly put in Degree, prevents it from realising what it pretends to be. We try to find its determinateness in another quantum, but this again needs its determinateness to be found in another, and so on *ad infinitum*. Thus we push the limit ever further on, the twentieth Degree becomes the twenty-first, then the twenty-second, and so on. The infinite series and the infinite quantum, which is its goal, are both contradictions in terms, the infinite series because,

whilst pretending to determine and make definite the quantum, it is unable to do so; the infinite quantum, because as infinite it negates the limit of quantum, though this limit belongs to its essence. We have here, as happened in the analogous case in quality, an example of the false or wrong infinite.*

At this stage† Hegel inserts a very interesting and characteristic note. The wrong infinity of quantum is looked upon by many as an object of admiration—as something sublime. In the spirit of modern thought the admiration has been turned from external nature to the mind, which is able to conceive such infinity and endlessness. Kant‡ was himself guilty of such pomposities. Against all such ideas Hegel enters the strongest protest—a protest thoroughly Hegelian, and in harmony with his conception of what true infinity and true greatness consist in. The dizziness which is the result of the contemplation of space on space, time on time, and worlds on worlds to infinity, is nothing more sublime than the dizziness of weariness. The starry heavens are marvellous and fit objects of wonder, not on account of their endless expanse, but as being a revelation in Nature of true measure and the reign of law.§ It is the order in the heavens, not their endlessness, which calls for admiration. This is an eminently Greek idea. Indeed, Hegel's whole conception of the infinite,

* Cf. *Werke* III., 263–266.

† *Ibid.*, 267 ff.

‡ Cf. *infra*, p. 183 n.

§ *Werke* III., 269.

his insistence on the necessity of self-limitation to true greatness,* and his conception and treatment of measure†—the truth of both the Quality and Quantity of Being—shows the importance of the Greek element in Hegel's thought—an element important not only in the relations which we are here considering, but perhaps still more so in his conception of social and religious life. The same ideas influence his protests against the Kantian view of immortality—a view which confounds endless with eternal life—and against the grounds of its adoption—the subjectivism of the Ought.‡

The solution of this contradiction, of which the infinite progress is the expression, is to be found in much the same way as in the case of the infinite qualitative progress. What we seek is a determination of the quantum, which is a definite quantity, but yet has it in its nature to find determination in something external. That a quantum shall have a limit is necessary, but where this limit is to be fixed, that it shall be this quantum rather than any other, cannot be determined from mere quantitative considerations. This prepares us already for the transition to Measure, the

* *Ency.*, § 80.

† *Werke* III., 395.

‡ It is, perhaps, of interest to remark that whereas Hegel uses the infinite in space and time, to bring out the inner contradiction inherent in it, and thus rise to a higher theoretical category, Kant treats it (or rather the feeling of sublimity, which it awakes) as, in a certain sense, a kind of revelation of the moral purpose of the universe. Cf. *Critique of the Judgment*, §§ 25 *seq.*

category in which the quality determines the quantity. A consideration of the false infinite, to which we have now got, points in the same direction. Quantity is sublated quality ; now, however, we have reached a point where a determination of quantity (quantum) is necessary, but where this determination cannot be found in the quantum itself, so that we are driven into the infinite progress to seek it.

This Infinite is, however, an unattainable Beyond-world, and as far as the quantum is concerned its Notbeing. What we really hope to find in it, therefore, is the *quality* which determines the quantity. For we have here got to the negation of quantum, itself the negation of quality, so that through this double negation we are again led back to quality, not, however, to the original immediate quality, but to a quality as determining the quantity, to qualitative quantity. Let us consider more closely how this comes about. The quantum, though determinate quantity, has its determination in another. But this other, which at first appears as the false infinite (which excludes the finite) reveals itself as having the same characteristics as the finite quantum—i.e., it is itself finite quantum. Thus we reach the true infinite of quantum—that in which the quantum is determined by a quantum, so that in going out beyond itself it only comes to itself. This is the quantitative Ratio, in which on the one hand the externality of quantity is

explicitly put, so that quantity here attains its highest expression, and on the other hand the qualitative moment of Being-for-Self again makes its appearance.*

6. THE QUANTITATIVE RATIO.

In the Quantitive Ratio the quanta no longer exist as independent self-sufficient categories, but sink into being moments. Thus in the ratio 2 : 8, or $a = \frac{b}{c}$, neither of the two members can alter at will, the alterations of either are bound up with the alterations in the other, and must take place in such a way that the ratio remains always constant (in this case 1 : 4). Their determinateness and limit is thus found in another quantum, the exponent of the Relation or Proportion. Now this being a quantum must have in it the moments of unity and amount. This is the case here, for the two quanta which form the sides of the ratio are no longer properly speaking, quanta as such, they cease to be treated as such, and the one may vary as much as it likes, but under the condition that it always contains the other the same number of times. Thus whatever be their meaning as quanta when looked at separately, they now lose this and simply sink, the one into being a unity, the other into being a definite amount of this unity (in the example given, four). The exponent is therefore the unity of Unity and Amount—in

* Cf. *Werke* III., 279-283.

this case no longer the simple moments of quantum, but quanta themselves, sunk, however, to being moments in a further quantum. Since, however, we cannot determine which of the two lower numbers is the quotient and which the unity, it is clear that in the direct ratio the exponent is not definitely and explicitly put as that which it pretends to be—namely, the unity of Unity and Amount. This property is definitely put in the Indirect Ratio, in which, moreover, the quanta cannot change indefinitely (as they can in the Direct Ratio, provided they both increase proportionately), but only within definite limits. The Direct, therefore, gives way to the Indirect Ratio $a = bc$.*

In the Indirect Ratio the exponent appears definitely as the product of the two sides. In the case of the Direct Ratio the quantum, which is the Exponent, is still immediate, so that the “fixed element is only a quantum.” This is also the case in the Indirect Ratio, but it is no longer a fixed Amount in reference to the Unit of the other quantum in the ratio. This means that whereas in the Direct Ratio when the one side increased the other also increased, and when the one diminished the other diminished—i.e., they determined each other positively, now, however, when one side diminishes the other side increases, and *vice versa*, so that they determine each other *negatively*. The Amount is, consequently, unstable in reference to

* Cf. *Werke* III., 381-383.

the Unit. The Exponent, therefore, now appears as qualitative Limit, it negatively determines the moments. In the Direct Ratio the only change was in the internal constitution of the Unit, the other member remained the same number of times (determined by the Exponent) this Unity. But there was no limit to the increase or diminution which might take place within the Unit. Now, however, when the Exponent is posited as the product of its moments, a limit is set to the diminution on the one side and to the increase on the other. The Exponent is in a certain sense the goal or "beyond-world" of the moments—a goal, however, which can never be reached, since with the disappearance of the one moment the other must also go. Both are only moments of the Ratio in so far as they limit each other. Limiting the other, and being limited by the other is, consequently, necessary to both. This infinite becomes, therefore, an affirmative, attainable goal, the simple quantum of the exponent. Therein the Beyond-world or goal with which the terms of the Ratio were burdened, is reached; it is in itself the unity of both, or, because it is so, the other side of each of them; since each has only so much value as the other is without it, so that its whole determinateness lies in the other, and this its Being-for-Self, as affirmative infinity, is simply the Exponent.*

But in the Indirect, just as in the Direct, Ratio

* Cf. *Werke* III., 284–288.

there is still present a contradiction, the quantum which acts as exponent is an immediately given quantum, whereas we have seen that the truth of such quantum was to be found in its suppression as an independent and immediately given quantity. Now in Indirect Ratio the quanta which form the moments are unstable and indifferent, but they find their determinateness in the fact that each has its value in the other's want of value. On the positive side they are each *implicitly* the whole of the exponent, and on their negative side they similarly find the limit of their mutual limitation in the Magnitude of the Exponent, so that their limit is also its limit. We see, therefore, that each of the moments occupies the same position towards the exponent, and at the same time it not only determines them, positively and negatively, but they should also determine it. This condition of affairs is no longer satisfactorily expressed by the indirect relation $a = bc$, but the Ratio of Powers, $a = b^c$.*

7. TRANSITION TO THE CATEGORY OF MEASURE.

Now that which characteristically distinguishes this ratio from the two others which we have been considering, and of which it is in a certain sense the unity—seeing that the members determine each other positively, and yet are contained in

* *Werke* III., 389.

their exponent as in their product—is the bringing forward of the qualitative element, the insistence on the *equality* of the two moments. The qualitative element is definitely introduced here as being that which determines and causes the quantitative to be what it is. Thus the contradiction, involved in the infinite progress, is finally solved by the explicit union of the qualitative and quantitative. Other considerations also will lead us to the conviction of the necessity of this sublation of quantity. The moments of the Relation now being equal, each in being determined by its other is really determined by itself. Similarly the Exponent is also, in being determined by its moments, really thereby determined by itself. The indifference and externality, which belongs to the very essence of quantity, and which made us transcend the limit and find the determination of quantum in some other quantum different from itself, is sublated. The externality of quantum is found in itself. Thus we come to the sublation (as an independent thought-form) of quantity. This does not lead us back again into the sphere of pure quality, but as usual with Hegel, the truth is found in the union of the two, in Measure.*

We have here what Hegel calls a double transition—first from quality to quantity, and again from quantity back to quality. Quantity was shown to be the “truth” of quality, but its

* Cf. *Werke* III., 389–392.

own "truth" was to be found not in itself held in abstract isolation, in its indifference and externality, but in the sublation of these its characteristic marks, which in their sublation, however, are still preserved as moments in the higher category to which the Dialectic next passes. We have now a return to quality, but not to the pure immediate quality with which we started. The gist of the whole transition is that though it was shown to be necessary that Being should have quantity, yet quantitative considerations alone could not determine the amount or magnitude of the quantum, could not determine whether it should be this rather than that particular quantum. To determine this, qualitative considerations are necessary. We have now, therefore, in Measure, a synthetic unity of both categories; a quantity which expresses a quality, and a quality which determines a quantity. Measure, as the truth of both, in which they exist as moments, therefore expresses the truth of Being.*

We have already dealt with the question how far it can be said that for Kant also the truth of quantity is measure. His constant appeal to experience and his insistence on the necessity for quantitative constructions to show their applicability to experience, if they are to be looked upon as anything more than mere figments of the brain, give a certain support to this view. Similarly the

* Cf. *Werke* III., 392.

fact that space and time cannot in themselves be objects of perception compelled us to advance to the consideration of the quality of the phenomena, which fill space and time and make them, so to speak, perceptible, "*Quantitas qualitatis est gradus*."* Every object represents a Unity of quality and quantity, not, however, because, according to Kant, these two categories, considered in their purity, involve one another, but because, in order to be an object of experience it must appear under conditions of space and time, and so in a space and time, which became objects for an empirical consciousness only when they are "filled"—i.e., have a qualitative aspect. It is not necessary to draw further attention to the divergence of this method of proving the inseparability of quality and quantity from Hegel's—it is the old distinction between a procedure resting on a constant appeal to experience and its conditions, and one founded altogether on pure reason. The same considerations will explain why it is that the union of quality and quantity does not appear in Kant as a pure category, coordinate with the other two—it is really *not* the result of the Union of two *pure* categories. Thus, even if for him every object is both qualitative and quantitative, this has much more concrete and sensuous meaning than is the case with Hegel.

For Hegel the passage from quantity, the "tran-

* *Prolegomena*, § 26 n.

scending of it " does not mean simply an advance on our part to a higher and more adequate point of view. So much it certainly does include. It also means an advance to higher truth in the objective sense, higher reality. The aspects, so to speak, of reality, which quantity represents, are not merely subjective, they are objective and real; yet they are inadequate. When we come to the necessity of passing beyond quantity we have proved to us the fact that no quantitative considerations or concepts can express the innermost essence of reality. This does not mean that the quantitative way of looking at things is false or deceptive in the ordinary subjective signification of these terms—as regards objectivity as distinguished from subjectivity it is as real as the highest Idea. It is true as far as it goes, and only becomes false when we take it for the whole, full truth, when we look upon it as being the last word about reality, when the inadequate aspect which it represents, and correctly represents, is regarded as constituting the full essence of the Absolute. The passage beyond quantity, then, means that all theories which have tried to find the last essence of the world in pure quantitative considerations must fail and prove inadequate. Thus the attempt of the Pythagoreans, who saw in number the full and proper expression of the Absolute, must be put aside as inadequate, and natural as it was that such a philosophy should arise, the further advance of the dialectic shows how very inadequate considerations

of number are to express the full truth. The Absolute also contains quantity as an element in it—else the latter could not find its place in the Dialectic—but only as a moment, and a not very important, though necessary, moment at that—a moment that occupies no very advanced position in the scale, and which, as it were, sinks ever lower in prominence according as the Dialectic advances. One of the advantages of the dialectical method, according to Hegel, is not only that it shows us the necessity of any particular category, but also that it checks a tendency to overestimate and exaggerate its range of validity, a tendency which might easily prevail had we taken it uncritically. Now we see that quantitative considerations are not enough, and hence that no purely materialistic doctrine can be final, or can give full expression to Reality—for the view that identifies the Real with quantity is the principle of materialism. Materialism and all attempts to reduce certain knowledge to terms of mathematics must be looked upon as failures. This, however, does not imply or justify any remissness in our procedure, when we are actually dealing with the category. Nothing could be farther from Hegel's thoughts—within its own sphere Mathematics reigns supreme—the important thing, however, to remember is that the sphere of Mathematics is not the whole Reality, but only an aspect of it.*

* Cf. *Encyc.*, § 99, and note.

Thus Hegel and Kant both agree in rejecting materialism, but for different reasons. Kant rejects it for the same reason as he rejects Spiritualism. Both are *equally* invalid, as far as the theoretical reason is concerned, being the result of the transcendent application of the categories. Hegel's rejection, as we have just seen, rests on different grounds. Materialism and the category which corresponds to it, Quantity, claim to represent adequately the true nature of the whole Reality. The process of the Dialectic has shown that Quantity is a necessary stage, and that a quantitative conception of the Absolute is to a certain extent true—in so far as it does not pretend to be the whole truth, it is not altogether false. But it has also shown that quantitative considerations when looked upon as being the whole truth involve their own self-destruction.

CHAPTER IV.

CONCLUDING REMARKS.

1. THE MATHEMATICAL METHOD IN PHILOSOPHY AND THE MATHEMATICAL IDEAL OF THE SCIENCES.

THE general characteristic of quantity according to Hegel is indifference and externality. From these spring what is characteristic in the mathematical (both arithmetical and geometrical) methods. Numbers, for instance, do not combine themselves into wholes, add and multiply themselves together; these are operations which have to be performed on them from without, and of which the two first-mentioned characteristics provide the possibility. Within the sphere of the category of quantity—a necessary stage in the evolution of the Idea—these operations require very careful handling, and no carelessness nor remissness can be tolerated.* But when quantity, with its characteristics of indifference and externality, has been transcended, and shown to be but a stage, and a low one at that, in the exposition of the Idea, then, at the same time, the mathematical treatment ceases to have full force,

* *Encyc.*, § 99, note.

and becomes less and less applicable to the ideas and notions to which we gradually advance. Thus the attempt made by Spinoza and Wolff, "to apply the mathematical method to philosophy and identify the external process of 'notionless' quantity with the progress of the Notion is absolutely wrong, and even self-contradictory."

The attempt to introduce the mathematical method into philosophy is condemned by Hegel as well as by Kant, but the reasons influencing the two philosophers to this conclusion are very different, almost contrary. The characteristics in mathematical reasoning which attracted attention were in each case different. With Hegel it was, as we have just seen, the externality, the almost entire absence of conceptual thought, and the mechanical nature of the process. Kant was chiefly struck with its absolute certainty and necessity as compared with all other synthetic mental operations. The favourable conditions which prevail in Mathematics are met with in no other science, because notions of quantity can alone be constructed *a priori* in pure intuition, so that it were a mere fantastic hope to apply this method to the philosophic mode of procedure by means of pure conceptions. Thus for Kant mathematical reasoning is an *ideal* reached in Mathematics alone.

We thus find that both agree in rejecting the

* *Werke* III., 40.

mathematical method as far as philosophy is concerned—Kant, however, because it sets too high, Hegel because it sets too low, an ideal. According to the latter the nature of the content itself must determine the method, and the mechanical and “notionless” procedure of mathematics could not be properly used to express the living progress of the divine Idea.

Their respective attitudes towards the mathematical ideal of the Sciences exhibit similar traits. On the ground that notions of quantity alone are capable of being constructed *a priori* in the pure intuition, Kant declares each discipline has only so much strict science in it as it contains mathematics. For this reason chemistry, but still more psychology, are far removed from the rank of natural science proper.* This view, which not only gave expression to Kant’s own personal intellectual development, but seems to follow quite naturally from the main features of the critical philosophy, which we have expounded, appears to Hegel as one of the “most hurtful of prejudices.” It seems a kind of apotheosis of the category of quantity. It is “a trace of the bad metaphysics which replaces the concrete Idea by partial and inadequate categories of the Understanding.”† “Our knowledge would be in a very awkward predicament if such objects as freedom, law,

* Cf. *Metaphysical Foundations of Natural Science*, Preface.

† *Encyc.*, § 99, note.

morality, or even God Himself, because they cannot be measured or calculated, or expressed in a mathematical formula, were to be reckoned beyond the reach of exact knowledge, and had to put up with a vague general image of them, leaving their details or particulars to the pleasure of each individual, to make out of them what he will."* This is in accordance with the ultra-rationalistic character of Hegel's thought, and helps to illustrate the difference of attitude towards empirical science adopted by him and Kant. He blames the latter because his philosophy could have no effect and influence on the methods of the Sciences, because it leaves the categories and method of ordinary knowledge unchanged.† In other words, Kant was content to learn from the established Sciences (as is shown most clearly in the *Prolegomena*)—Hegel would teach them.

2. THE DOCTRINE OF ANTINOMIES WITH KANT AND HEGEL.

Since some of the most characteristic differences between Kant and Hegel find very interesting illustration in their treatment of the Antinomies, we shall bring our essay to a close by a short exposition of their principal divergences in this connection. The most characteristic portion of the

* *Encyc.*, § 99, note.

† *Cf. Ibid.*, § 60.

Transcendental Dialectic is certainly the doctrine of the Antinomies. In Kant's actual treatment this was limited to the criticism of Rational Cosmology, though, as I have suggested, it is capable, in accordance with the spirit of the critical philosophy, of a much wider application. The error in all metaphysics is due to the unnoticed influence of the sense on the understanding.* In the case of Cosmology this influence gives rise to the Antinomies. Here, taking the world as a whole as our object, we are able to make contradictory assertions, whilst each member of the contradiction is capable of rigid proof. Only two of these Antinomies—those connected with the "mathematical" categories—claim our attention in the present instance. We can prove that the World is—(1) infinite in space and time, and (2) composed of simple parts; but unfortunately for the high claims of reason, we can with equal stringency prove the contradictory of both of these assertions. It might indeed be more correct to say (seeing that in all cases except in the thesis of the fourth Antinomy the proof is apagogic) that we can disprove with absolute stringency both the thesis and the antithesis—*i.e.*, we can demonstrate that both of two contradictory statements are false. Such a palpable violation of the principles of contradiction and excluded middle is explicable only on the assumption that the subject about

* Cf. B. 350.

which we are in each case predicating is really no object of knowledge. This is in fact the case, the World as a whole is an Ideal, a Problem, but of such a nature that it can never be an object of human experience. In so far as, paying no heed to the conditions which alone render experience possible, we hypostatise this ideal, we may proceed in one of two directions, each having its foundation in the character of our knowledge. We may concentrate our attention almost entirely on the Form-side, and so set up and look upon as really existing an ideal of completeness and system. This was the way that the Rationalists or Dogmatists pursued.* On the other hand, we may concentrate our attention more on the fact that the accretion of ever new matter for systematisation can never end. This was the road followed by the Empiricists. In so far as theirs was only a protest against the claim of Reason to be able to arrive at a knowledge of objects after it had deserted the realm of experience, they were justified; but in so far as it sets up its own method of procedure as an account of the World as a whole, and instead of saying *we must proceed to infinity*, or rather indefinitely in our efforts at synthesis, says that the World is actually infinite, then it becomes as equally one-sided and dogmatic as Rationalism.†

The antinomies arise, therefore, from the alter-

* Cf. A. 466, B. 494.

† Cf. A. 470, B. 499.

nate hypostatisation on the one side of the Ideal of Unity, the end or ideal we strive after, and on the other of the actual process of acquiring knowledge, and from the fact that, when this takes place, the conditions imposed on our knowledge through our intuition being sensuous render the demands made by the Reason incapable of fulfilment.* The result is thus due to a hypostatisation of different standpoints.†

Hegel's attitude towards Kant in this matter is typical; with recognition of the great importance of the fundamental idea, and of Kant's achievement in discovering it, he combines a sharp criticism of the development of it in detail. The demonstration of thought's natural tendency to issue in contradiction, and the consequent tendency to bring together categories which the Understanding insists in holding separate, was Kant's great service to philosophy. The arbitrary and artificial limitation of the number of Antinomies to four, as well as the character of the so-called "proofs" and the solution offered were, however, little in harmony with the great importance of this fundamental notion.‡ We have already had occasion to suggest that Kant's table of antinomies is capable of much

* Cf. A. 474, B. 502. "The assertions of the Antithesis are of such a nature as to render the completion of an edifice of cognition absolutely impossible." Cf. A. 422, B. 450; A. 478, B. 506; A. 486-488; B. 514-516.

† Cf. A. 459, 461, B. 487, 489.

‡ Cf. *Encyc.*, § 48, and note.

wider application than it actually finds at Kant's hands, but this enlargement takes place in accordance with the general critical conception of the essence and meaning of the Antinomies, and not in the Hegelian fashion of showing the contradiction which is necessarily inherent in every pure thought-product.* As regards the so-called proofs it may at once be granted that they do not possess that stringency which Kant imagined. But even if we grant to Hegel that they are nothing else than elaborate examples of *petitio principii*,† still the main value of the Kantian doctrine remains untouched. This consisted in showing how, through the overemphasis of either of the two interests which go to build up the fabric of knowledge, our thought moves in either of two contrary directions, both of which are equally natural. He thus suggested an explanation of the great outstanding oppositions which are as old as the history of thought—namely, the Finiteness or Infinity of the world in space, its Origin in time or its Eternity, Atomism or Monism,‡ Empiricism or Rationalism as dogmatic systems of Philosophy. We thus see that the whole inner meaning of the doctrine of Antinomies for Kant would disappear were he to follow Hegel's advice § and limit himself to, consideration of the contradictions inherent in

* Cf. *Werke* III., 216, 217.

† *Ibid.* 218–228, 274–278.

‡ Cf. Windleband, *Geschichte d.n. Phil.* II., p. 100.

§ Cf. *Werke* III., 217.

the pure notions. Nor could he have limited himself to a consideration of pure quanta such as pure space and time, since, as Hegel seems to leave out of sight, for Kant these cannot in themselves be objects of perception, and the antinomies arise out of the conditions governing actual experience. The world as a whole, which is looked upon as limited or as unlimited in space and time, and as infinitely divisible, or composed of atoms, is not the pure infinite space and time, the *a priori* forms of sense-experience, but the *filled* space and time, which can be objects of sense-perception. It was therefore inevitable that the antinomies should take with Kant that *concrete* form which Hegel thinks unnecessary.

Hegel's main objection, however, is to the subjective solution of the Antinomies by means of the transcendental ideality of the world of experience. This, as evidence of a belief that it cannot contain contradiction, betrays too great a tenderness for the World, especially the World of sense-experience.* We do not get rid of the contradictions by transferring them from the world to the spirit, which thus falls into contradiction with itself.† The spirit indeed has "contradictions, but it is strong enough to carry them. The so-called world can never rid itself of contradictions, and cannot bear them, and therefore

* Cf. *Werke* III., 279.

† Cf. *Encyc.*, § 48, and *Werke* III., 32.

suffers birth and decay.”* Contradiction is not merely subjective, it is also objective. Negation is as positive as affirmation.† The essence of the Antinomies is contained in the fact that all pure Notions when taken in isolation involve their opposite. Their truth is in their Union. Thus, in the case in hand, Continuity necessarily involves Discreteness, and conversely; the Limit in Quantum requires that it be transcended and sublated. The Antinomy is inherent in the very nature of “quantity,” and therefore in space and time and the world.‡ The one-sided assertion of discreteness gives infinite or absolute division, and thus something indivisible as principle; the one-sided assertion of Continuity, on the contrary, infinite divisibility.§

“It is quite correct to say that we can go beyond every *definite* space, and every *definite* time; but it is no less correct that space and time are real and actual only when they are defined or specialised into ‘here’ and ‘now’—a specialisation which is involved in the very notion of them.”||

I may, here, be permitted to ask whether, so far as these expressions are capable of being given any acceptable sense, the solution they suggest is not on the subjective lines he rejects?

* *Werke* III., 279.

† *Cf. Ibid.*, 44; *Encyc.*, § 81.

‡ *Cf. Werke* III., 224.

§ *Ibid.*, 216.

|| *Encyc.*, § 48. n.

That opposing forces may work in the world seems to be intelligible, but that the world is at the same time capable and incapable of infinite division (and it is only thus that we get the contradictions with which Kant deals), and limited and infinite as regards extension in space is not easy to understand.

**KANT'S TREATMENT OF CAUSATION:
SOME OF ITS COROLLARIES**

1. INTRODUCTORY REMARKS.

To parody Macaulay, every student of philosophy knows that it was Hume's treatment of Causation that first broke Kant's dogmatic slumber. True, commentators are far from being united in determining which of his dogmatic slumbers Kant here refers to. We must, however, leave on one side this in itself not uninteresting question in exegesis. Yet it may be well to dwell for a few moments on Hume's treatment of the problem as Kant conceived it. The following quotations from the Introduction to the *Prolegomena* contain all that it is necessary to say on this point :—" Hume took for his starting-point, mainly, a single but important conception of metaphysics—namely, that of the *connection of Cause and Effect*—and required of the Reason which professes to have given it birth a rigid justification of its right to think, that something is so constructed that on its being posited something else is therewith necessarily also posited ; for so much is contained in the Conception of Cause. He proved irrefutably that it is quite impossible for the Reason *a priori*, and out of mere conceptions, to cogitate this connection, since it

involves necessity ; but the problem nevertheless was not to be overlooked, how that, because something exists, something else must necessarily also exist, and thus how the conception of such a connection can be regarded as *a priori*. Hence he concluded that the Reason completely deceived itself with this conception, that it falsely claimed it as its own child, while it was nothing more than a bastard of the imagination, which, impregnated by experience, had brought certain presentations under the law of association, and had substituted a subjective necessity arising thence—i.e., from habit—for an objective one founded on insight. . . . It was not the question whether the conception of Cause was correct and useful, and, in view of the whole knowledge of Nature, indispensable, for upon this Hume had never cast a doubt, but whether it could be cogitated *a priori* by the Reason in such a manner as to constitute an inward truth independent of all experience, and therefore capable of a more extended use than that of being applied solely to the objects of experience.”

Thus we see that, according to Kant, Hume, adopting the psychogenetic method, had explained the apparent objective necessity of the law of causation by means of a subjective necessity—i.e., a habit produced through the laws of association. Causation was simply the idea of an invariable succession in our experience, the expectation

created by constant repetition that when we experience *a* we shall also experience *b*, which up to the present has always followed it. The principle of Causation was therefore for Hume, to use Kantian terminology, a synthetic but *a posteriori* judgment—i.e., a judgment in which the predicate contains something which no analysis of the subject notion will reveal, but which must base its validity entirely on the evidence of its truth afforded by experience. It had made the claim indeed to be *a priori*—i.e., absolutely necessary—and not dependent for its truth or acceptance on the number of times we have found it exemplified in experience; it had put forward the claim to be a judgment not only which no experience *had* contradicted, but which no experience *could* contradict. To these pretensions Hume believed he had once for all put an end, by showing that its apparent objective necessity was really the result of mental habit. Kant, however, saw that many other judgments must share the same fate as Causation—the axioms and judgments of mathematics and metaphysics among them, for these also are synthetic and claim to be *a priori*. He therefore put himself the question, how are synthetic judgments *a priori* possible? Since these, however, form the presuppositions of certain mental disciplines this question resolves itself into—(1) How is pure mathematics possible? (2) How is pure natural science possible? (3) How

is metaphysics in general and as a science possible? * The Critique of Pure Reason was an attempt to answer these three questions.

We have already seen the necessity of carefully distinguishing Kant's method of epistemological enquiry from the psychogenetic method of Hume and his followers.† Kant's question is not one of psychical origin or development; considerations of this kind form at most unconscious presuppositions of his method. His problem is primarily and essentially one of justification and evaluation. He starts out with the assumption of an objectively valid experience, and his task is to discover what this assumption, taken even at its lowest valuation, as the assumption of an objective order of things and events in space and time, necessarily involves. He deals with the time when the individual has before him a very complex content made up of an almost infinite variety of objects (his own body included), qualities and events, which occupy a certain definite position in space and time, and are related to each other in a rather complex fashion. Now, in so far as the individual claims objectivity for this world picture, what else is he thereby inevitably committed to? The very conception of objectivity contains in it something of necessity, something which insists that objects and events be united this way and not in any other, and yet this

* Cf. *Prolegomena*, § 5.

† Cf. *supra*, p. 4 *seq.*

something must be independent not only of the wilfulness of the individual, but also of the working of his psychical mechanism. As we have already seen, and as is indeed quite evident, subjective necessity is no guarantee of objectivity—it is the parent of error and falsehood as well as of truth. Yet this “object” which we seek cannot, according to Kant, be anything beyond the content of ideas, something out of relation to knowledge; such a chimera could be of no use for our purpose, and it could as such afford us no criterion by which to distinguish between truth and falsehood. The only solution then is that the necessity which we seek is to be found *connecting* the various contents of our experience. Objectivity, in other words, presupposes necessarily valid concepts and rules which act, as it were, as the binding stays of experience. I put certain notes together to form a concept, and think that this concept is objective; I can only make this claim if there is some objective connection—*e.g.*, subsistence and inherence—between these notes, which determine that they must be so and not otherwise related. Following a train of thought which is largely, if not entirely, controlled by my psychical mechanism, I place events in a definite order in time. If I make the claim for this order that it is objective, that every human being, in so far as he thinks truly, is bound to put the events in the same order, I can only do so if there is a rule which determines that, independently altogether of my subjective association, the

two events are such that one not only always *does*, but always *must*, follow the other. Thus we see that experience, taken even at its lowest valuation, if only it claims to be objective, necessarily involves the acceptance of certain necessary concepts, axioms or rules. To turn "judgments of perception," in which we have simply the empirical juxtaposition of two sensations, and to which the term judgment can only very improperly be applied, into "judgments of experience," where we make objectively-valid judgments, even though only about singular facts—*e.g.*, "the sun warms the stone"—the categories of the understanding are necessary. The social universality which we claim for our judgments, even about particulars, involves the acceptance of the logical universality of certain notions and judgments.

Let us now pause for a moment to see what kind of world it is that we have arrived at. Immediately given to us were sensation-contents of various qualities, but also possessing extension. These we have, in the course of our mental development, put together into a kind of world-picture in which each object, our own body and those of our fellow-men included, has its definite place assigned to it. Each of our fellowmen has a similar such picture. Moreover, when we cast our memory back into the past, we are able to see that events have also a certain order in time. Allowing that our fellowmen, whether past or present, have a similar experience, this can be greatly extended. But, as

we saw, we can claim objective validity for and universal assent to this arrangement only if we look upon the relative positions which objects and events occupy in space and time as determinable according to necessary rules. In so far as, but only in so far as, our world-picture obeys these necessary rules of objectivity, we may look upon it as being valid and objective.

Now this view possesses certain characteristics that call for remark. Firstly, the starting point is the individual * and his construction of objects and events; the question always is, what is involved in his claiming objectivity for this construction? Again, his experience is built up of two very heterogeneous elements—new matter is being continually experienced which has to be combined into objective unity with that already present, and there are absolutely necessary and unchangeable rules according to which this unification must take place. We here see the principle which underlies Kant's distinction between sense and understanding.† Further, of the one unit world-picture there are two very distinct aspects—objects are outside each other in space, and when we look at things in the light of memory we also see that events succeed one another in time. It must be borne in mind that, so far as the objective world-picture is concerned, these are but two

* Cf. *supra*, p. 7.

† *Ibid.*, pp. 9 and 10.

aspects, which can be distinguished only by abstraction. This is what lies at the basis of the Kantian distinction of internal and external sense.* Each of these has also a formal and a material aspect; the pure or formal aspects are respectively time and space. This world-picture is the object of experience, and remains strictly within the limits of experience; any additions which may be made to it must comply with the same condition. Anything is real in so far as it is connected with the present given by any objective rules of connection, which are valid for experience. These

* Kant's use of the distinction is not altogether consistent. On the one hand it seems to have what I may call its psychological face-value—that is, it is used to distinguish between what is revealed to us by introspection and by our external senses respectively. On the other hand it simply expresses the distinction between the temporal and spacial aspects of the one indivisible object of experience, and in this its “transcendental” significance lies. This latter use is possible owing to Kant's psychological starting point. For him the world is not something distinct from the sensation-contents (“given” to the individual as the motes of the sunbeam) united or in process of being united into an organic whole. This one world-picture has two aspects, its ‘*representative*’ or content side, and its ‘*entative*’ or psychical side. The two *a priori* forms of the world of experience, corresponding respectively to these two aspects, are space and time. It is in this sense that “internal sense” is understood when it is said that time is its pure form; indeed time is the internal sense when this is purely formally interpreted. Now, Kant shows a tendency to confuse this formal meaning of the term internal sense with its material signification—i.e., he does not clearly distinguish between its transcendental and its psychological or metaphysical use. This, perhaps, prevents him from appreciating at their full value some of the problems on which he touches. Cf. *infra*, p. 239 *seq.*

rules have had their objectivity proved with reference to the possibility of experience, and as constitutive elements thereof, and can therefore lay claim to no validity when used, as in the case of the metaphysics of the supernatural, outside the limits of that experience. Finally, our world-picture, which may be extended in space and time by employment of the rules of understanding, and by accepting the experience of others, can never even approach totality or completeness. It is always something incomplete, to which new matter is being continually added. Hence any statements made about the world as a whole, a presumption of which Rational Cosmology is guilty, are made about that which is not and never can be an object of experience. Since, notwithstanding the warning just issued, its propositions pretend to be about an object of experience, contradictory theorems or antinomies all capable of proof, and so of refutation, are the rule in this pseudo-science.

2. METAPHYSICAL DEDUCTION OF CAUSALITY.

The positive result of the Critique, so far as we have gone, has been to establish the necessity for experience of categories and axioms or synthetic judgments *a priori*. Kant's main purpose, the evaluation of the theoretic disciplines which lay claim to *a priori* knowledge, would seem to require

a precise and exact enumeration of these categories or axioms. With his professed attempt to satisfy this claim, I have already dealt. It suffers from the insuperable objection of putting the cart before the horse. In discussing his treatment of the category of quantity I have tried to show that, even apart from this fundamental weakness, it also breaks down in detail, and can be replaced by a "transcendental" deduction which will provide us with a list of the categories, and at the same time explain their function in making experience possible. This procedure may also be followed in the case of "Causality," and to the consideration of this subject we shall now pass.

Under the general head of Relation we find, as its three subclasses, "Substance and Accidents," "Cause and Effect," and "Community," or "Reciprocity between Agent and Patient." The so-called "metaphysical" deduction is as follows:—Judgments in formal logic are divided under the general heads of Quantity, Quality, Relation and Modality. Under Relation we have the further subdivision, Categorical, Hypothetical and Disjunctive. The relation of subject and predicate, in the categorical judgment, when used as a real category and applied to conditions of time, yields "Subsistence and Inherence," and under the same conditions the real category of "Cause and Effect" is "deduced" from the relation of Antecedent or Ground and Consequent in the hypothetical judgment. Similarly the dis-

junctive gives us "Community." I confess that the metaphysical deduction (prescinding for the moment from its great fundamental error of reversing the natural order) possesses more plausibility here than in the case of the other categories. For instance, the relation of cause and effect *does* seem to be fairly adequately described as the conception of condition and conditioned applied to determine the relation of events in time. In fact the causal relation may be said to be built up in analogy with the relation of ground and consequent in the hypothetical proposition.*

Yet, in spite of this, the "metaphysical deduction" of the category of causation—still leaving on one side the main general objection—does not seem sound. In so far as formal logic recognises the distinction of judgments into categorical, hypothetical and disjunctive, it does so largely with its eye on the subjective movement of thought rather than on the objective relation.† Attention, that is, is paid not to the objective relation which is asserted to hold or not to hold between the elements, but to the mental attitude which the speaker adopts towards this relation. This relation may be unconditionally asserted or denied, and in this case the judgment is categorical, no matter whether the relation of which there is question is one of subsistence and inherence, cause and

* Cf. Höfding, *Mind*, 1906, p. 203.

† Cf. *supra*, p. 5.

effect, action and reaction. On the other hand, the speaker may refuse to give an unconditioned assent or denial, but may make his assent to the judgment or the objectivity of the relation dependent on some condition. In this case the judgment is hypothetical no matter what the nature of the relation is. Thus the formula "If A is B, C is D," may be categorical or hypothetical, according to what it is meant to express. The intention may be categorically to assert the connection between the protasis and the apodasis, between A being B and C being D, or it may be to predicate B of A but only on condition that it is granted that C is D. In the former case the connection between the two members of the complex judgment—viz., A is B and C is D—is objective. In the latter case it is subjective and may have any or no foundation; at best the relation is here too indeterminate to yield anything definite like the category of cause. The *categorical* judgment of the form "if A is B, C is D" is admirably suited to express the relation of condition and conditioned, and perhaps the category of cause and effect might be held to arise in analogy with it. But, even if this were so, the "deduction" from the distinction of categorical and hypothetical judgments is abandoned, as the proposition we are now referring to is quite as categorical as that which has the form "S is P." It is in fact a categorical judgment about the relation of condition and conditioned which, in the concrete, takes various distinct forms. The

objective relation referred to may, for instance, be that of container and contained, as in the case of the premisses of a syllogism and its conclusion,* it may be that kind of relationship—evidently not that of cause and effect—which, for example, exists between the equality of the sides of a triangle and the equality of its angles, or it may be that of cause and effect, or finally, the relation of motive to action. But in all these cases the judgment is categorical, and the relation to which it refers is not deduced from the kind of judgment, but the exact opposite is the case since the judgment presupposes this relation. One of the relations just mentioned—namely, that of container and contained—is a pure creation of formal reason, and it may be held that the others are formed in analogy with it. But the distinguishing mark of this relation is its analytical character, whereas what Kant is most anxious to insist on is the impossibility of reducing the other instances of condition and conditioned which I have mentioned to analytical judgments.

From every point of view, then, the attempted metaphysical deduction of the category of causation has entirely failed, and any attempt to base on it the validity of the axiom of causation must share the same fate. Yet even were it successful Kant's purpose would not be achieved. Even—

* To express this relation is only one of the functions of the syllogism.

that is, if it were granted that he had shown that *some* fundamental *a priori* concepts were necessary to the possibility of experience and that the table of judgments enabled us to frame a full list of all the fundamental concepts of the understanding—still the objection would remain that it had not been shown that *all* these fundamental forms were necessary. In fact, in addition to a general transcendental deduction, which shows us the necessity of *a priori* concepts, and a general metaphysical deduction, a particular transcendental deduction for each category would still be necessary. Now it is because I think that under the head of the "Analytic of Principles" Kant has provided us with this that I regard the failure of the metaphysical deduction as of *comparatively* slight importance. A consideration of this portion of his work, supported by remarks dropped on other occasions, will also provide us with a much more satisfactory basis for the division and classification of categories he has adopted.

3. TRANSCENDENTAL DEDUCTION OF CAUSALITY.

Under the heading "Proof of a Definite Order among the Categories" I have already tried to show the real grounds at the basis of the fourfold division of the categories.* A consideration of the passages there quoted will show pretty clearly the

* Cf. *supra*, p. 73.

function which the categories of Relation have to fulfil—namely, to determine the objective temporal relation of events and objects *inter se*. "The three *modi* of time are permanence, succession and coexistence." To these three modes of time correspond the three categories of Relation—Substance, Cause and Community. The principles or axioms which they yield Kant calls Analogies of Experience. The *nervus probandi* for all three is found in the two sentences: "As experience is a cognition of objects by means of perceptions, it follows that the relations of the existence of the manifold [*i.e.*, the content] must be represented in experience not as it is put together in time [*i.e.*, according to the laws of association], but as it objectively is in time. And as time itself cannot be perceived the determination of the existence of objects in time [*i.e.*, of their mutual order in time] can only take place by means of their connection in time in general, consequently by means of *a priori* [and necessary] connecting conceptions." * Now, since time itself does not change, but persists, and yet as such is not an object of perception, there must exist something permanent in time, to which as a substratum all changes are related. All change is change of the permanent. Hence the principle that "in all changes of phenomena substance is permanent, and the quantum thereof in nature is neither increased nor diminished."

* B. 219; M. 133.

All that changes or that can change is not substance but belongs to the modes of the existence of substance, consequently to its determinations. Thus Kant proves the principle of the permanence of substance amid the alteration of its accidents—a principle which lies at the foundation of the other principles of Relation, as the categorical judgment is involved in the hypothetical and disjunctive.

The second principle is that which deals with the objective order of succession of events in time, and this we must examine in more detail. The proof is as follows:—"I perceive that phenomena succeed one another—that is to say, a state of things exists at one time, the opposite of which existed in a former time. In this case, then, I really connect together two perceptions in time. . . . But imagination can connect these two states in two ways, so that either the one or the other may antecede in time ; for time itself cannot be an object of perception, and what in an object precedes and what follows cannot be empirically determined in relation to it." [The meaning is :—If pure time were an object of perception we might fix the objective temporal order of phenomena—*i.e.*, determine whether event *a* preceded *b*, or *vice versa*, by connecting event *a* with the point of the time-flow in which it happened, and similarly event *b*. But pure time cannot in itself be perceived, and so this easy solution of the problem is excluded. As far, then, as mere *perception* goes we may indeed decide which is prior and which is

subsequently *perceived*, but not which is *objectively* prior and which objectively subsequent.] “ I am only conscious then that my *imagination* places one state before, and the other after ; but not that the one state antecedes the other in the object. In other words, the objective relation of the successive phenomena remains quite undetermined by means of mere perception. Now, in order that this relation may be cognised as determined, the relation between the two states must be so cogitated that it is thereby determined as necessary which of them must be placed before and which after, and not conversely. But the conception which carries with it a necessity of synthetical unity can be none other than a pure conception of the understanding . . . and in this case it is the conception of the relation of cause and effect, the former of which determines the latter in time as its necessary consequence. . . . It follows that it is only because we subject the sequence of phenomena, and consequently all change to the law of causality, that experience itself—i.e., the empirical cognition of phenomena — becomes possible.” *

To put it in a slightly different way. Our perceptions of events and phenomena are always successive. But this succession among our perceptions is no guarantee that their objects are successive in exactly the same way. Sometimes

* B. 233, 234 ; M. 142.

this succession among our perceptions represents objective simultaneity, as, for example, when I successively perceive the different parts of this room. Sometimes event *a*, which I perceive after event *b*, really objectively precedes it—*e.g.*, I may hear one cannon shot subsequent to another, to which it is however objectively prior, simply because the one is at a much greater distance than the other. Thus the order of perception is no criterion of the objective order of events or phenomena in time. As Kant has pointed out in the passage just quoted, we have no perception of pure time (which would be the same for all), so that we might determine the objective temporal order with reference to it by means of mere perception. Thus we must seek our criterion elsewhere than in perception. We can determine the place of phenomena in time only relatively to each other, and therefore in time in general only if the two phenomena, *a* and *b*, are of such a nature that they are bound together according to an objective and absolutely necessary rule, which determines not only that *a* *does* always, but that it *must* always, precede *b*; in other words, that *a* is a condition precedent of *b*'s existence. But this is the rule that "all changes take place according to the law of cause and effect."

By way of illustration, let us take Kant's example (slightly modified). I see a raft float down the current of a river. My perception of it lower down follows upon my perception of it

higher up. But, as I have already pointed out, the order of my perceptions is no guarantee as to the objective order; this order may really be the reverse, and the raft may occupy the higher position subsequently. But if I consider the causal connection, in this case the water which is flowing down, I see that the occupation of the lower position must follow upon and not precede the occupation of the higher.

Let us dwell for a moment on the maxim we have just established and examine its features. We have here a synthetic judgment; no analysis of a concept will show how something altogether different must follow from it when it is posited as existing. Again, the judgment is necessary and *a priori*, it does not depend for its validity on the number of times a connection between events has actually been experienced. Instead of being derived from experience, it is itself necessarily presupposed in all objective experience of succession. There is the greatest difference between a succession of experiences and the experience of an objective succession. Yet, though it resembles mathematical axioms in that both are synthetic *a priori*, it does not possess the *immediate* self-evidence of the latter. We hold that the connection between cause and effect is necessary and universal, not because the judgment is self-evident in itself, but because we see that without it objective experience would be impossible. Moreover, what has been established is not the mere abstract

law that every event must have a cause, but a definite order and regularity among events and phenomena.* Finally, there is an important consequence of our mode of proof which must not be left unmentioned. Since it is to determine position in time that the principle we are dealing with has been found necessary, it follows that the cause in its turn must also be an event; because, had it been always in existence there were nothing to determine the happening of the event at this

* The phrase "the principle of causation" is ambiguous, even in ordinary philosophical use. It may simply mean to state that every event must have a cause, or it may go further and be used as an expression for the Unity or Uniformity of Nature. This latter again may be interpreted either laxly or strictly. According to the more lax interpretation all that is assumed is that the same cause has the same effect, though the converse does not necessarily hold. Taken in its stricter signification it is held to imply that the converse is also true, and that Nature is a system. The further question, whether the quantification of cause and effect and their strict mathematical equation to each other is also involved, need not be discussed here.

Now Kant uses the same term to designate these several meanings. He does not seem even to distinguish clearly the significance of these different interpretations of the "causal axiom," or to be aware that it is possible to combine acceptance of one with rejection of the others. Yet it is possible to hold that the axiom "every event has a cause" is a necessary truth, and yet that the Uniformity of Nature has, in last analysis, but an empiric basis. Now the principle which Kant's method is fitted to prove, so far as it proves anything at all, is the Uniformity of Nature. It is this "axiom," moreover, which has constitutive value for *empirical* science. The principle every event must have a cause, in its baldness, can at most stimulate to enquiry in this region.

moment rather than at any previous one ; unless, that is, the cause is also an event which has been brought into existence by a previous cause, which in its turn is also an effect, the *raison d'être* of the assumption of the principle of causality would be gone.

The third analogy of Experience is proved in an exactly similar way. The substances *a* and *b* can be assumed to be objectively coexistent only if they are so connected that each contains the ground of determinations of the other. Hence the principle that "all substances, in so far as they can be perceived in space at the same time, exist in a state of complete reciprocity of action."

The result of these three proofs of the objectivity of the categories of relation has been to establish the Unity of Nature. As Kant himself puts it: "The combined expression of all this is: All phenomena exist in one nature—that is [according to a definition immediately preceding], in a totality of phenomena connected, in respect of their existence, according to necessary rules, *i.e.*, laws—and must so exist, inasmuch as without this *a priori* Unity, no unity of experience, and consequently no determination of objects in experience is possible." * As he points out, immediately afterwards, the unity of the universe, in which all

* M. 160 B.

phenomena must be connected, is only a mere consequence of the principle of community just dealt with.

4. METAPHYSICAL IMPORT OF KANT'S PROOF OF CAUSALITY.

Kant has thus proved the fundamental axiom of physical science—the principle of mechanism. Within the realm of experience this principle has absolute validity, no exception to it is thinkable. Since it must be presupposed to explain how experience itself is possible, it is evident that experience can provide no examples which contradict it. Should any apparent exception arise, it is clear that we cannot look upon this as forming a part of objective experience, but as a subjective illusion.* Hence any talk of a free cause—that is, a cause which is not itself an effect and fully determined—is immediately ruled out of court, so far as it pretends to an empirical basis.† Whether

* Cf., among numerous other passages, M. 336; A. 543; B. 571. Also M. 330; A. 532; B. 560 *seq.*

† Cf. *Canon of the Pure Reason*, Sec. 1.—“As regards the phenomena or expressions of this will—that is, our actions—we are bound, in obedience to an inviolable maxim, without which reason cannot be employed in the sphere of experience, to explain these in the same way as we explain all other phenomena of nature—that is to say, according to its unchangeable laws.”

with this absolute mechanism and determinism in the phenomenal world, freedom in the noumenal world, the realm of the thing-in-itself, is compatible, cannot be decided here, as from the point of view of knowledge we can give no positive character or meaning to the notion either of a free cause or of a thing-in-itself.

Still another important corollary for metaphysics follows from our method of proof of the principle of causation—namely, the untenability of the cosmological argument for the existence of God. The maxim of cause and effect has been proved to be absolutely necessary in so far as we are dealing with experience. But seeing that its validity has been established with direct reference to the possibility of experience, and that it can only be proved in this manner, we have no right to apply it to the supernatural, beyond the limits of all experience. It is a constitutive principle of knowledge when empirically employed, but can only be illicitly used to connect the world of experience with something altogether beyond its limits—namely, its Creator. The principle has been proved simply as a necessary presupposition to establish the objective order of events in time, and cannot be employed to connect time and eternity. Further, we saw above that a necessary consequence of this mode of proof was that the cause was always itself an effect, and so on *ad infinitum*. The principle is then simply one to connect events, and it can never help us to reach a first cause—

that is, a cause which is not also an effect.* Were, therefore, the cosmological argument unassailable on other grounds—and Kant holds it is not—still these considerations would be sufficient to prove its futility.

5. CRITICISM OF THE PROOF OF THE AXIOM OF CAUSATION.

The result, then, of Kant's treatment of the category of cause and effect has been to provide a firm basis for natural science, and at the same time to show the impossibility of Freedom as an empirical factor and the futility of the attempt to prove the existence of God by means of the cosmological argument. Let us now see if these results have been legitimately reached, and if they are in agreement with some of the cardinal points of the Kantian doctrine and method.

Probably one of the first things that will be noticed is that Kant adopts what I may call a "streak" view of causality.† The cause of an

* If "efficiency" means anything more than *necessary* regularity among events, so that when *a* is posited *b* *must* also be posited as following it, then the Kantian method has not proved efficient causation.

† Something like a "streak" view of causation might be justifiable in conjunction with a metaphysics which believes in substantial forms and does not hold that causes must themselves always be events. It can also be held on the grounds of practical

isolated event *b* is sought in another isolated event *a*. But this is a very rough and ready way of treating the matter, often necessary perhaps in ordinary practical life and thought or in what after all is but a somewhat more exact form of the same attitude—ordinary experimental science. But this manner of thinking is scarcely exact enough for strict philosophic speculation. We must replace the abstract events *a* and *b* in the full concrete out of which we abstracted them. When this is done we recognise that cause and effect apply to the totality of conditions and the totality of the conditioned. The totality of phenomena at any moment is the cause of the totality of phenomena at the moment immediately succeeding. This emendation is necessary from Kant's point of view. Experience after all is not the consciousness of the objective succession of two isolated events *a* and *b*; it is rather the consciousness of a great complex of phenomena, in which each element has its definite place in space and time assigned to it. The order in which I place the two events *a* and *b* is objectively valid if it fits in with the order which they would assume in this complex. Thus the statement of the proof should now be something like this: The determination of the temporal position of two phenomena *a* and *b* implies that they belong

convenience and empirical evidence. But to Kant, who accepts Hume's atomistic sensationalism, and still insists on proving the absolutely necessary validity of his synthetic judgments *a priori*, neither of these avenues of escape are open.

to a systematic totality, in which the position of every member in space and time relatively to the others is determined by *a priori* and necessary rules. The example that Kant chooses (the raft on the river) is not calculated to bring out the necessity of this method of statement, but it is not difficult to think of examples which will illustrate this point of view.* The less directly the phenomena are connected the more necessary is it to fall back on the idea of their belonging to "a systematic totality with a thorough-going inter-relation of parts," if their objective order in time is to be determined in the Kantian method. Kant himself, in one of the extracts which I have quoted, speaks of nature, in the sense of a unified totality of phenomena, being the presupposition of experience; but, as the point is of importance for what follows, I have tried to show that he is compelled to take up this position.

But, however necessary this emendation of his statement of the proof of the principle of causation and of the unity of nature may be, it brings us into sharp conflict with another equally fundamental doctrine of Kant's. We have already seen that the world as a whole is not, and can never be, an object of experience. It was on this rock that rational cosmology split. Our experience is something ever incomplete; we cannot reach the totality

* Yet even in Kant's example the case is much more complicated than might at first sight appear.

of the series by which we continually add new content to it.. The impossibility of the world as a totality being an object of experience, is necessarily involved in Kant's starting point and presuppositions. The world as a whole is nothing real or actual, it is at most an ideal or a problem, a goal towards which we may strive, but which we can never reach. The object of experience is not something independent and apart from our experience, but is the world-picture of the individual, and this is constantly receiving accretions. It is not a rounded off whole, the edges are everywhere jagged and indefinite. Statements about the world as a totality in fact assume that the world is a thing-in-itself—something else than the object of actual experience. But we have just seen that the proof of the causal axiom, when taken in its strictness, really involves the idea of the world as a systematic totality with a thorough-going interrelation of parts.

We thus find Kant face to face with the three following dilemmas—or perhaps with three aspects of one dilemma. He must reject either the principle of causation and Uniformity of Nature as an *a priori* law or else the fundamental idea of his criticism of rational cosmology, and indeed of the dialectic as a whole. The most important portions of the Dialectic, however, presuppose that he has successfully established the claim he makes for the category of cause; yet he cannot choose to stand by the apriority and necessity of the principle of

causation and let the results of his criticism of cosmology go by the board, because both are equally closely connected with his radical empiricism * and his starting point in the psychological individual. Again, he must either renounce his subjectivism and phenomenalism,† or else his hope of proving the validity of necessary synthetic *a priori* judgments, and yet he is constantly reminding us that he accepts phenomenalism because it is the price which alone can purchase apriority. He must finally either adopt a "streak" view of causation or presuppose an "ideally perfect experience" as given. With the former he cannot demonstrate the necessity of the causal axiom, and the latter flies in the face of all Kantian principles.

But, even were the method of proof of the second analogy of experience—and the same criticisms hold good of the first and third—not liable to the objections I have just been urging, it is necessary to point out that it leaves it undecided whether the principle established shall be looked upon as expressive of efficient or of final cause. Kant indeed interprets his proof in the former sense, but it is clear that objective order in time is

* By this phrase I simply mean to convey that Kant limited knowledge strictly to the world of experience, without, however, implying that he held that "empiricism" was sufficient to explain this world.

† Kant's phenomenalism, most probably, means merely radical empiricism in the sense just explained.

determined not only if *a* determines *b* as cause determines effect, but also if *b* determines *a* as end determines means. Thus final cause has as much claim to *a priori* validity as efficient cause, so far as the method of Kant's proof goes. I grant that the conception of final cause which would be thus established is a very emaciated one, a mere shadow of what we generally mean by it, but exactly the same may be said of the concept of efficient causation which Kant claims to have proved.

6. CAUSATION AND FREEDOM.

With his failure to prove the absolutely necessary character of the laws of nature, his attack on empirical freedom must also be rejected. But, even had he been able to show that as far as the external world is concerned mechanism is the only possible point of view, yet its transference to the psychical would still require justification. It may be plausible to urge that the mere perception of *a* before *b* is no guarantee of their being objectively in this order, and that for this I must assume that they are directly or indirectly connected by an absolutely necessary rule of reason such as that of causation. But is this mode of reasoning applicable to the order which holds among our ideas as ideas, our psychical states as psychical? Can any other proof here be given, or asked for, of the temporal order of two perceptions except the

immediate testimony of consciousness? What precise meaning has it to try to establish the *objective* validity of these perceptions, a validity which shall be independent of the order in which the perceptions took place? Can the Kantian claim for objectivity and validity for everybody be made without the presupposition of common objects, such as objects in space provide? * Again, what is the reason of the difference of the treatment of the categories of Substance and Cause in reference to their application to internal sense? If substance is at the foundation of all the categories of relation † it seems difficult to understand how, if the conditions for the application of substance be absent, those for the application of Cause should be present. If the nature of internal experience be such that no *a priori* judgments may be made concerning it, how comes it that we can dogmatically rule out empirical freedom? ‡ Thus it would seem that there are no grounds for transferring this iron and exceptionless rule of mechanism to the manifold of the internal sense. We may indeed hold that something like the law of causation applies, for instance, in the case of the association of ideas, but then I think this theory claims to be founded not on any *a priori* principles, but on an appeal to experience.

Yet perhaps Kant's position here is somewhat

* *Prolegomena*, § 19 note.

† *Ibid.*, § 39 note.

‡ A. 381-382.

more subtle and less easy either of comprehension or refutation than might at first sight appear. In fact the questions must be raised as to the applicability of the categories, especially that of cause, to the "internal sense"; this will also require us to give at least a brief consideration of the relation in which the internal and external senses stand to each other. Here, however, I may premise that we must be content with hints and tendencies of thought and not expect any cut-and-dried doctrine. As far as I can see, any attempt at interpretation must remain somewhat problematical, and will raise many more problems than it will solve. A consideration of the various passages bearing on the problem would suggest some explanation like the following:—

The categories cannot be applied directly to the internal sense.* "To understand the position of things according to the categories, and thus to demonstrate the *objective reality* of the latter, we require not merely intuitions, but external intuitions."† The internal sense has no presentation of the permanent analogous to that of space and the matter which occupies space in the case of external sense; hence the category of substance can here find no application. Again, "in order to represent *change* as the intuition corresponding to the conception of causality, we require the repre-

* Cf. *supra*. 119 seq.

† M. 176.

sensation of motion as change in space ; in fact it is through it alone that changes, the possibility of which no pure understanding can perceive, are capable of being intuited. Change is the connection of determinations contradictorily opposed to one another in the existence of one and the same thing. Now, how it is possible that out of a given state one quite opposite to it in the same thing should follow, reason without an example cannot only not conceive, but cannot even make intelligible without an intuition ; and this intuition is the motion of a point in space, the existence of which in different spaces . . . alone makes the intuition of change possible. For in order to make even internal change cogitable, we require to represent time, as the form of the internal sense, figuratively by a line, and the internal change by the drawing of that line (motion), and consequently are obliged to employ external intuition to be able to represent the successive existence of ourselves in different states. The proper ground of this fact is, that all change to be perceived as change pre-supposes something permanent in intuition, while in the internal sense no permanent intuition is to be found." *

Further, though it may be urged that the fact that perception *a* took place subsequent to perception *b* was sufficient evidence of or rather *was* the temporal order in which they occurred, yet when

* M. 176 ; B. 291-292 ; cf. *supra*, p. 119 seq.

I arrange the various phenomena of internal sense with the help of memory I may need some rule to determine the real temporal order of succession of different mental states. In fact what we really want to know is, *did* perception *b* really follow perception *a* or is it merely fancy on my part that it did? "I am in fact conscious of my own existence as determined in time. All determinations in regard to time presuppose the existence of *something permanent* in perception. But this permanent cannot be an intuition in me. For all the determining grounds of my existence which can be found in me, are representations, and as such do themselves require a permanent, distinct from them, which may determine my existence in relation to their changes, that is my existence in time wherein they change." * Thus the determination of my various mental states, as regards their temporal order, can take place only in reference to the changes of something permanent—that is, of material substance. †

Yet how the changes in material substance are to determine my empirical existence is not very clearly indicated anywhere. Both my mental states with their temporal position, and material substances, with their changes and interrelations, are all merely phenomena. Since cause is only

* *Refutation of Idealism*, opening paragraph corrected according to the note to the preface of the second edition of the *Critique*.

† As we saw above, according to Kant, material substance alone gives us an intuition of the permanent.

comprehensible on the supposition of substance, and we have knowledge of only one kind of substance—namely, matter—it might seem that Kant might be led to adopt some kind of epiphenomenalism—a theory which would of course be limited to phenomena. But of this we find absolutely no trace in Kant. Or again, his insistence on the part which the "soul-concept" used as a regulative idea might play at least as a warning against all materialist explanations of spiritual phenomena, as well as the importance of keeping the regularity of his external phenomenal world intact might suggest the adoption of some kind of Parallelism theory; but of this again we can find no positive evidence, and the whole tone of the *Critique* seems to be against it.*

* In fact Kant does not seem to have noticed that even with his Transcendental Idealism the problem of the relation of material *phenomena* and psychical *phenomena* still remained to be settled. Treating them merely as *phenomena*, the question as to their mutual determination in time still remains. That Kant did not grasp the problem in its full significance is probably due to the ambiguity of "internal sense," to which I have already called attention (*supra*, p. 216 n.). By a continuous oscillation between the two meanings which this term possesses he was enabled to give an apparent solution of the problem. That all phenomena are phenomena of the internal sense may be accepted from the point of view of the critical philosophy when we interpret "internal sense" transcendently. But this leaves the question of the relation of psychical and physical *phenomena* untouched. But when we interpret this term in its psychologico-metaphysical meaning, then from the point of view of the critical philosophy the acceptance of the statement that all phenomena are phenomena of the internal sense seems impossible in face of Kant's vigorous rejection of Cartesian and Berkeleyan Idealism.

I think that at any rate a partial solution of the difficulty may be found in a remark let fall towards the beginning of this essay—that internal and external senses only represent different *aspects* of the same one indivisible experience, and that they can be distinguished and, as it were, held apart only by an effort of abstraction. The “inner” sense has, strictly speaking, no matter peculiar to itself. Inner sense is merely outer sense looked at from inside. Now, through the mediation of the Imagination, “that blind but indispensable function of the mind,” the understanding is enabled to determine the internal sense and by this means bring into being a picture of the external world which can lay claim to objectivity. “That which determines the internal sense is the understanding, and its original power of conjoining the manifold of intuition—i.e., of bringing this under an apperception. . . . Under the name of a transcendental synthesis of the imagination, the understanding exercises an activity upon the passive subject whose faculty it is. . . . The internal sense contains merely the form of intuition, but without any synthetical conjunction of the manifold therein, and consequently does not contain any determined intuition, which is possible only through the consciousness of the determination of the manifold by the transcendental act of the imagination—synthetical influence of the understanding on the internal sense—which I have named figurative synthesis.” * Thus the imagina-

* M. 94 B.

tion, working under the influence of the understanding, brings about a synthesis of ideas on the subjective side. To this there corresponds a picture of the external world in which objects and events are related in space and time, and for which we can claim objectivity in so far as it obeys the rules of synthesis of the understanding. Thus the connection of objects and events in my world-picture involves at the same time that the ideas, out of the proper connection of which my objective world-picture was formed, are also bound together according to necessary rules. But we can establish this systematic connection on the side of the internal sense only indirectly. Because the contents of experience are connected by necessary rules, we must also suppose that the connection between the ideas which gave rise to this experience is also according to rule. Thus we see the regularity and order, which we must assume to exist among phenomena and events of external experience, force us also to assume a corresponding regularity on the obverse side—that is, in internal experience.

Now this line of reasoning might be perfectly cogent if we were dealing with an ideally perfect experience. If the complete object of our consciousness were a world or a world-picture in which every event and phenomenon was in its proper position in space and time, and we were conscious of the relations in which every object therein stood to every other, then we might argue to a similar

cast-iron connection among our ideas as psychical states. But this, of course, is far from being the case. Many of our thought-constructions will not fuse into harmony with what we hold to be objective experience. This is pre-eminently the case with dreams and creations of fancy, but it holds true also of many of our more serious efforts; our knowledge takes the form of isolated junks rather than of an organic whole. Error plays a large part in our life. When, as in these cases, the contents fail to unite, what becomes of the harmony which was to prevail in inner sense?

Furthermore, it will be noticed that inner sense is used by Kant here in a very restricted sense. It by no means covers what we generally include under internal experience, all that introspection reveals. It is in fact confined altogether to cognitive states. Feelings and desires as well as decisions and acts of will are excluded. Yet to discuss the question of freedom and determinism without special reference to these portions of our psychical life seems simply playing with the subject. He himself acknowledges that feelings must always remain subjective, and can never be accounted to the object.* Desires he refuses to consider, as they belong to the practical not to the theoretical side of our nature. In discussing the idea of practical Freedom in the *Critique of Pure Reason* he does seem to take some account

* *Prolegomena*, § 19 note.

of desires, but what will immediately strike one is that he seems to be confusing two meanings of the word "sense" *—an inheritance, I think, from the Platonic theory of knowledge and of values. "Sense" and "Understanding" can on the one hand be distinguished according to epistemological function. The same terms may, however, be distinguished according to moral value as "lower" from "higher" motives of action. But a little consideration will show that we are here dealing with two essentially distinct notions, however much philosophers may have shown a tendency to confound them.

In the real problem of freedom, I do not think that the question is merely one of the application of the mere bloodless category of cause to our psychical states. This, as I have already remarked, may be all that is meant on certain theories of association, but when we are dealing with a conflict between full concrete desires, and are trying to decide the question of freedom and determinism in this respect, what we are bound to consider is whether the complete full personality of the agent is not *the* deciding factor. If this can be established by an appeal to experience, to what careful introspection reveals, I submit that nothing that Kant has succeeded in proving can be urged to deny it the title of knowledge. Causality, efficient causality, may indeed be exercised in the

* Cf. M. 331.

case I refer to, but I think that it will be admitted that by efficient cause something more is meant here than "a peculiar kind of synthesis that with something, A, something entirely different, B, is connected according to law."

Similar considerations arise in connection with the cosmological argument for the existence of God. Kant thought that he had proved the objective validity of his notion of cause—namely, universal succession of events according to necessary law. But we saw reason to doubt the cogency of his method of proof in this respect. Yet it was from this conception of causation that he delivered his attack on that aspect of the cosmological argument with which we are here concerned. But this was not the conception on which those, who put forward this argument, built; whatever else they may have meant, they certainly meant something more than mere necessity according to rule. Their concept of causation they may not have perfectly analysed and explained, but Kant's particular attack on their position fails until he has demonstrated that his own view of causation and it alone is objective.



**PRAGMATISM, AS AN EPISTEMOLOGICAL
METHOD, IN ITS RELATION
TO CRITICISM**

1. TRANSITION FROM CRITICISM TO PRAGMATISM.

KANT is what the Germans call an epoch-making philosopher; he marks a turning-point in the history of thought; he ushers in an entirely new method or habit of philosophic thinking. The bulk of what is most characteristic in subsequent speculation is most readily comprehensible when considered in its relation to him. Pater has somewhere said of Michael Angelo that his most characteristic effect is gained "by leaving nearly all his sculpture in a puzzling sort of incompleteness, which suggests rather than realises actual form." The same holds true to a certain extent also of Kant, though with him the effect was unintentional. Out of the lifeless rock of eighteenth century thought he sculptured the forms which have been the active principles in the philosophic speculation which has arisen since his time. But he left them incomplete, he left the native rock still clinging to them. This incompleteness is typical of his thought in every direction. His greatness is not to be measured by any definite body of doctrine he has left behind him, but by the fact that all succeeding philosophers have

had to settle accounts with him and have been influenced by him, either positively or negatively.

For those who accepted his principles the task remained of developing to their completeness those ideas which he had left in a half-finished state. In this process it is inevitable that much of what is characteristic in Kant's thought should disappear and that doctrines should be enunciated, which he would have been the first to repudiate. Thus he has suffered the fate of all epoch-making philosophers; the development of his fundamental idea has made it necessary to transcend him.

The critical philosophy, as it left Kant's hands, was not an organic whole; it contained the seeds of many future systems of philosophy, but in itself it lacked the system and harmony among its different elements, which the philosophically-biassed mind expects. It was impossible to find a resting place in it; it contained elements which led to its own disintegration, which drove speculative minds to seek an answer to its questions outside its own limits. But, though the necessity of "development" was evident, yet the critical philosophy itself did not definitely determine the lines along which this development was to take place. Kant points beyond himself, but in this respect he is like a sign-post with many fingers pointing in different directions, and the road taken depends largely on the personality and needs of

the traveller. The particular system which is to be evolved from the critical philosophy depends mainly on the aspect of that philosophy which is held to be most fundamental, and the selection of this aspect will be to a great degree determined by the character, history and intellectual bias of the philosopher who takes it on him to "carry Kant's principles to their logical conclusions." This explains how schools widely different in thought and method can all claim to be considered Kantian.

In the first essay of this series I have endeavoured to show how Hegelianism springs from the emphasis of one aspect of Kant's teaching. But there is no inherent necessity why the development should not have taken place, as indeed it has taken place, in directions which are very different from those which Hegel followed. In the present paper I shall try to point out some striking affinities between Criticism and a mode of thought which in many respects is the very antithesis of Hegel's. In working out the implications of some of Kant's fundamental doctrines whether we arrive at the Absolutism of Hegel with its pantheistic leanings, or at the individualism of Pragmatism, which to many seems to verge on utter scepticism, and has decidedly a pluralistic bias, depends on the particular idea or aspect of the critical philosophy which we determine to regard as basic. That the pragmatists would be only too ready to repudiate the genealogy here suggested for them is immaterial

to my purpose, which is simply to show that from certain points of view they may be regarded as the legitimate inheritors of the critical mantle.

Let us dwell for a few moments on the results reached by Kant. On the one hand we have a world as the object of our theoretical cognitive faculties—the product of the combined working of sense and understanding. In so far as we can claim objectivity for it, we must look upon it as due to the combination or synthesis, according to certain rules, of the atom-contents of our sense-perception. As far as the world of experience we are now speaking of is concerned, these rules of synthesis are absolutely necessary—they are incapable of meeting with any exception within experience, for the objectivity of experience can be established only through them. Any event or order of events, any object which, acting on the suggestion of some sensation, we construct and are inclined to look upon as real, can lay claim to objectivity, to being something more than an individual fancy, only if it can form a member of a cosmos, made up of sensation-contents, organised into a world of substances and attributes, causes and effects, with definite places in space and time, assignable according to certain immutable laws.

On the other hand, in a certain sense contrasted with this, we have a world of values—values which are the objects not so much of the cognitive

faculty,* as of the will. But here also the condition of objectivity, the condition of vindicating more than a subjective individual worth for our value-estimation, is that it shall be capable of being brought into relation with what is of absolute and necessary worth, with what has value independent of our empiric desires.

We thus see that the Kantian conception of truth has a strong family resemblance, in one aspect at least, to the Socratico-Platonic. The Sophists, reducing every problem to a matter of psychology, were inclined to forget the distinction between the *what is* or *has been* and the *what ought to be*, between origin or history and validity. Working along these lines they undermined the very foundations of truth. Against them Socrates and his pupil set up the conception of truth as a norm which should be authoritative for all in like manner. So against the psychologism of Hume, which to him seems similarly to confuse questions of history and validity, Kant points out the necessity of general conceptions, rules and axioms, to justify even that claim to acceptance which we make for singular judgments of experience. But the difficulty, all too familiar perhaps to students of the history of Greek philosophy, which confronted Plato in its metaphysical form—namely,

* Though, of course, in order to be values for us they must be known, yet this relation to the Cognitive faculty is not what gives them their distinctive character.

how, after having got your ideal world, to connect it with the ordinary world of experience—presents itself now to Kant, but with an epistemological twist. We have discovered our supreme principles as the condition of any objective experience whatever. They are discovered therefore without reference to any specific, any particular kind of experience. What guarantee have we that the matter of our particular experience, given as it is by sensation, will be capable of subsumption under these general laws? If it were not capable of being so subsumed, then experience would certainly be for us impossible; yet there is no *a priori* necessity why our sense-products and our intellectual forms should fit so remarkably well together, as the existence of experience shows them to do. This coincidence we can explain, from our point of view, only on the supposition that the form of knowledge and its matter are ultimately the creation of a Being whose intuition is not merely passive, like our sense-intuition, but is productive, formative, like our understanding. Yet this conception of an Intellectual Intuition, which we must here call in to explain the possibility of experience, is but a subjective point-of-view, we cannot claim objective validity for it. Moreover, it transcends experience—it will try to give an explanation of experience from outside, instead of making experience the final touchstone to test the validity of conceptions.

Yet we are driven to this conception of an

Intellectual Intuition by an attempt to explain experience from within, by our failure to show how the two functions, which are necessary to its existence, can combine to give a united product.

Such considerations as these must raise a doubt, whether from Kant's standpoint he was justified in drawing the hard and fast distinction he did between sense and understanding. From *his* standpoint are not sense and understanding, like matter and form, to be taken relatively not absolutely? Is there really, as it were, a *materia prima* of sense? Is the distinction anything more than methodological? Is sense perception a merely passive function, as Kant held? Is not the whole problem which we are now discussing, and the rigid distinction of sense and understanding, which gives rise to it, really due to the initial resolve of Kant stringently to separate the questions of validity and origin or development?

We are driven to raise this fundamental doubt when we consider the problem from other standpoints as well. The rules and categories which we discovered in our attempt to find out the conditions of experience are not *a priori* in the sense of being in consciousness before any experience. On the contrary, experience has been largely built up without explicit reference to them, at least in the pure form in which Kant enunciates them. It is only for the critical philosopher that they appear as the conditions which are necessary to justify experience's claim to objectivity. But as regards

the actual making of experience, in so far as they have been operative at all, it is only as guiding the blind work of the imagination. Can we be sure, then, that we have read these categories correctly out of experience ? Even granted that experience is no heap of Sensations, but is more—namely, the content of our sense-perceptions systematised by certain categories—yet, are these *necessarily* identical with those which mathematics and physical science presuppose ? We have already partially dealt with the difficulties which these doubts and a consideration of what is involved in the development of knowledge raise for Kant in regard to those portions of the Critique in which he tries to establish certain *a priori* forms. We there suggested that they were to be met by insisting on the distinction between questions as to what is *de jure* and what *de facto*. Let psychology decide, if it can, the number, nature and form of the categories which were actually operative in producing our present world-picture ; but still the fact remains that we cannot justify the objectivity of this world-picture unless at the same time we are prepared to accept these categories and axioms which Kant enumerates.

We thus find ourselves again brought face to face with the fundamental question : how far was Kant justified in separating so rigidly the question of validity from that of genetic development ? Some of the difficulties into which he gets by doing so would seem to suggest that the answer must be

unfavourable to his mode of procedure. Perhaps also the more closely we grapple with the problem the more this suspicion tends to be strengthened. What then is truth for Kant ? and how distinguish a valid claim to truth from one which is false ? Truth is for Kant some norm, which is authoritative for the individual, but is independent, as far as its binding force is concerned, of his desires and psychical history. According as we regard a proposition as complying with or falling foul of this norm, our attitude of mind towards it will be either one of approval, and we are said to affirm the proposition, or of disapproval and we deny it. But what is the test whether the combination of subject and predicate which we attempt has objective validity or not ? I think that for Kant it must finally be that it fits into a system, into our idea or picture of the world as an organised totality, in which the position, spacial and temporal, of every object and event can be determined according to absolutely necessary law.

But what validity has this idea of experience as a systematised totality with a thorough-going interrelation of parts, which is thus revealed as the latent presupposition of the whole Kantian epistemology ? *

It is not the experience of any individual human consciousness, nor even of the human race at any given time, which is far from complete, and any-

* Cf. *supra*.

thing but an organic whole. Nor again is it a world existing independently of our cognitive faculties, as ordinary consciousness conceives the world, though it is possible that some such idea may have *unconsciously* affected Kant's reasoning on this point. The whole tenor, the whole spirit of the *Critique*, as well as several express statements, prevent us from entertaining such a supposition for a moment. Nor, again, is it an ideal archetype in the mind of God—which was perhaps the notion which was at the bottom of Descartes' mind when he thought the existence of God necessary for his criterion of truth. With Kant, God is no such epistemological presupposition. Finally, the entire idea of regarding experience as a complete system runs directly counter to the Transcendental Dialectic, which has for its special business the task of showing the futility of statements about such "totalities."

But, if we regard experience as something less than this organised totality, can we look upon our categories and axioms as anything else but instruments and postulates in the service of *better*, but not complete, organisation? The value of a conception or category must be determined by the *function* which it fulfils in organising our experience. But the function of any concept, just like the function of any organ in our body, can be determined most satisfactorily, and in some cases only, by an enquiry into its history.

Finally, as to Kant's claim for general axioms and conceptions that they are necessary to deter-

mine what shall be objective and what subjective, does it not finally rest on the forced separation in which he continually held the faculties? For certain methodological reasons it may at times be advisable to consider the cognitive faculty or function in isolation; but with Kant this tended to become a metaphysical fetish. As a matter of fact, it may be urged, the will plays quite as important a part in building up our idea of objectivity and objective experience as the "pure" intellect. The necessity therefore which forced Kant to posit *a priori* truths in order to justify the claim to objectivity really rested on false and misleading abstractions. Had Kant paid attention to considerations such as these, he might have seen that not only were questions of truth questions of value, co-ordinate, for instance, with moral and practical judgments, but that truth itself was fundamentally a species of the good. That he failed to do so was again ultimately due to the fact that he so strongly insisted on the necessity of separating the enquiry into the validity of belief from that into its psychical history. The world we have before us, our actual objective world, is no mere phantasma of sensations and bloodless categories, a world into which meanings and purposes—and ultimately meaning depends on purpose—do not enter. Our reaction to it is not merely on the side of our cognitive faculty; on the contrary, our whole concrete personality, as willing and feeling intellect and intellectual will,

reacts and is operative in building up our concrete objective world, which is thus replete with meaning and purpose. If, then, we refuse to consider the question of the validity of such conceptions as reality, cause and effect, substance and attributes apart from the function which they actually have exercised and do exercise in experience we shall escape many of Kant's difficulties. It will no longer be an insoluble mystery how the matter of thought and the form of thought co-operate successfully to bring about experience, since the particular form which, in the struggle for existence, among the many that make their appearance, will be used, selected and preserved, will be that one which is especially useful for handling and managing the given of sense. Yet, on the other hand, we shall have to sacrifice all claims to necessity and apriority on behalf of our axioms, and, whilst consistency may be an important element in determining what we shall regard as true, yet we shall be careful not to push our conceptions into uses for which they are not fitted, and shall consequently allow other motives to determine our evaluation of truth.

2. PRAGMATISM.

I have tried to reach the central position of Pragmatism by means of such internal criticism of Kant, as I conceive it possible that a pragmatist,

who was very determined to avoid misrepresentation, might adopt. Of course, there is no suggestion that Pragmatism developed in any such fashion out of the Critical Philosophy. The considerations which have really been operative in driving some philosophers to the position that "axioms are but postulates," are probably, nay certainly, different. For instance, the voluntaristic trend of some recent psychology and certain interesting developments in scientific thought during the second half of the nineteenth century might be mentioned. In Kant's time no one thought seriously of questioning the "necessity" of "Euclid" or of Newtonian mechanics; there was also an almost universal belief in the doctrines of natural kinds; scientific theories were looked upon as accurate transcriptions of the laws of nature. But the nineteenth century has seen the birth of new geometries and the spread of the Evolution theory, which seemed a death-blow to "natural kinds." * The multiplication of rival mechanical theories, all equally capable of explaining what they were called on to explain, has led to the idea that perhaps none of them is really a copy of the laws of nature, that they are in fine only conceptual shorthand for grouping our results and for leading to new ones. The insight by the recent development of empirical logic into the important part played by hypothesis has tended to strengthen

* Cf. Professor James, *Mind*, 1904, p. 59.

the suspicion that perhaps our most fundamental axioms, our so-called necessary truths, may in last analysis turn out to be nothing more than successful hypotheses.

What pragmatism then has done is to turn its back upon the enquiry into the limits and credentials of *pure* thought, and to face our actual *concrete* thinking, especially in its scientific form, and see how new truth is established there, what it means and what is its function.* The account we are thus able to give of what truth is and means in these concrete cases, pragmatism applies to all truth whatsoever. In doing so it simply follows the example of some sciences, such as geology and biology, the essence of whose procedure consists in generalising some simple observable process—such as gradual variation—and making it apply to all times.

What office, what requirements then, must a new claimant for recognition as truth, a new idea, or theory fulfil? What leads to its acceptance? Were our old beliefs perfectly harmonious among themselves, and congruent with new experience, we should feel no need to put forward any fresh idea or theory to explain them. But because, owing to reflection, we discover clashes, incompatibilities in our old stock of experience and beliefs, or between it and new experience, we are forced to seek some theory or concept which will succeed, with the

* Cf. James, *Pragmatism*, p. 54 seq.

least possible disturbance or loss, in bringing about harmony. We do not want completely to overhaul our old stock, nor can we altogether reject the new experience and belief and go on quite satisfied with the old, as if the new fact had never presented itself—at least we cannot always do this. What we want then is some hypothesis which will act as it were as mediator between the rival claimants. “New truth is always a go-between, a smoother-over of transition. It marries old opinion to new fact, so as ever to show a minimum of jolt, a maximum of continuity. We hold a theory true just in proportion to its success in solving this problem of *maxima* and *minima*. But success in solving this problem is eminently a matter of approximation. We say this theory solves it on the whole more satisfactorily than that theory; but that means more satisfactorily to ourselves, and individuals will emphasise their points of satisfaction differently.*”

Now, the essence of Pragmatism consists in holding that this description of truth has universal application. It applies it therefore to our so-called necessary categories, truths and axioms. These were really adopted at first because they happily performed this mediatory function, because they gave satisfaction in their attempt to unite junks of opinions whose juxtaposition was causing mental uneasiness of some sort. Their success was so

* James, *Pragmatism*, p. 61.

conspicuous, and they have been found so useful and psychologically necessary ever since, that we would prefer to give up most of our beliefs rather than surrender instruments so potent.

We thus see that the pragmatist put himself in a ~~certain sense~~ much the same question as Kant. He also takes his start in the individual consciousness, and his fundamental question is, "How can I distinguish between a valid claimant for truth and an impostor?" But the pragmatist's method of trying to solve this common problem, and the results at which he arrives are very different in some respects from Kant's. The pragmatist refuses to follow Kant in separating the question of the origin of belief from the question of its validity. Validity for him means in last analysis successful *functioning* in satisfactorily connecting beliefs, and an idea's function can only be determined by considering it in actual operation, in its historical surroundings, so to speak. In view of the extraordinary success of the evolutionary hypothesis and method our pragmatist "will find it difficult to understand how any logician can persist in the assertion of a rigid difference between the problem of origin and of nature, between genesis and analysis, between history and validity. The entire significance of the evolutionary method in biology and social history is that every distinct organ, structure, or formation, every grouping of cells or elements, has to be treated as an instrument of adjustment or adaptation to a particular environ-

ing situation. Its meaning, its character and its value is known when, and only when, it is considered as an arrangement for meeting the condition involved in some specific situation.*

Why not apply this method, which has been so successful in biology and social history, to our theory of knowledge, and seek for the meaning, nature and value of a category or theory in the function which it actually exercises in the development of human knowledge ?

To this the Kantian will object that such a mode of procedure does not avoid the fallacy known in logic as a vicious circle. It presupposes the validity of the evolution hypothesis and method, which are themselves but a product of thought, and stand in need of justification. They must in fact be tested by this very epistemology, of which they pretend to be the foundation. It is an attempt moreover to explain and justify present by means of past knowledge, apparently forgetting our knowledge of the past depends on present knowledge—you cannot explain and justify knowledge by means of its historical antecedents.

Pragmatism will probably answer, interspersing its remarks with some regrettable humour, that this is a complete misunderstanding of its position. It makes no attempt of the kind alleged. It will draw its opponents' attention to the important distinction between the *causa essendi* and the *causa cognoscendi*. The past is the *causa essendi* of the

* Dewey, *Studies in Logical Theory*, pp. 14, 15.

present, but the present is the *causa cognoscendi* of the past. Now, the attempt of pragmatism is expressly to apply to the past the theory of truth which an examination of the actual present formation of truth suggests. As regards its relation with the evolutionary theory, it is simply making legitimate use of an analogy—and this is a proceeding adopted by every other type of philosophy as well—namely, the attempt to explain the whole by means of a conception or theory which has been found applicable and successful within certain limits.* Such is the procedure adopted by Aristotle, Leibniz, Berkeley, by the upholders of the Mathematical Method in Philosophy, by the materialists and the spiritualists. The critical method itself makes use of an analogy; it tries to apply to the conception of knowledge as a whole, a conception which has meaning only within knowledge, relating to the attitude in which different portions of the content of knowledge stand to each other—namely, the conception of truth.

The only difference, then, will be whether the analogy of Pragmatism will not be more successful than that of Criticism. It at least looks to the actual state of affairs, and is not dependent on any unjustified abstraction such as we attempt to make when we try to separate questions of origin and validity.

* Cf. Höffding, *Mind*, 1905 (N. S., No. 64), "Problems of Philosophy," p. 121 *seq.* Translation.

But these remarks are not to lead us to suppose that pragmatism is a psychological theory. On the contrary, it is quite well aware of the distinction which exists, and must exist, between psychology as a theory of existence or development, and logic as a theory of evaluation. What it insists on is simply that the two are not to be separated by walls of iron, that accurate psychological knowledge is of immense importance for fruitful logic. Both psychology and logic deal with truth, but in different ways. Psychology must include in its work a description of the origin, relationship and family history of the *claim* to truth, but it does not attempt to give any rules which would enable us to determine the objective value of such claims. This latter belongs to the province of logic.*

What criterion do the pragmatists then propose? How shall we be able to distinguish a mere claim to be true, from an actually or at least sufficiently established and justified claim? The criterion proposed is *satisfaction*, and primarily every kind of satisfaction. In so far as a theory, idea, judgment gives us any kind of satisfaction, so far forth is it true; in so far as it runs counter to this and produces dissatisfaction it is false. Baldly stated in these its fundamental terms pragmatism must appear, as indeed it has appeared, patently absurd. But let us consider it dispassionately.

In the first place, it is necessary to point out

* Cf. Schiller's *Studies in Humanism*, p. 71 seq.

that a judgment which *in the long run* produces more satisfaction than another is truer.* Thus we are not compelled to hold that whatever judgment produces immediate satisfaction is really true. Further use of this so-called truth may lead to an overwhelming balance of failure and pain. Again, as we have seen already, satisfaction is relative to the individual, and though primarily, in the infancy of the race, success mainly meant "practical" success, and a judgment was used as true in so far as it helped the organism to thrive and survive, yet it is possible that these considerations should in the course of evolution give way to others more abstract. Thus, though for pragmatism a theory is true in so far as it works, yet this formula is not so simple as it looks. A judgment may "work" in half a dozen different ways, satisfy half a dozen different desires, yet it may

* To the objection that it is impossible to know beforehand what will prove to be true "in the long run," the answer in pragmatistical language would be that for absolute certainty we must wait until it is "run"; but this need not prevent us from making use of past experience and forming a pretty shrewd guess. Of these guesses some will be more successful than others, according to the experience and insight of the person making them; they are all, however, made at "owner's risk"; but this element of risk cannot be eliminated when we are dealing with claims to truth. It is natural that many of our ideas should be accepted as true which subsequent investigation proves false and replaces by others. These latter, then, are true, and they were always so. How is this possible on the pragmatist theory? What "they were always true" means is simply that they would have functioned at least equally well, probably better, had they been originally adopted.

fail to work, and produce immense dissatisfaction in a dozen other ways. This is a factor which must be always borne in mind when considering the merits of the pragmatic theory of knowledge. I cannot simply declare that a certain judgment is true, even true for me, because I wish it; it may clash with several other more important "truths" or "beliefs" which I should finally be much more loth to part with. Much as I desire to hold a certain belief, to adopt a certain theory, I can do so only on condition that I surrender other beliefs with which it is incompatible—and, as I may not be prepared to do this, I must perforce be content to surrender the former.

Again, to quote Professor James, "Ideas (which themselves are but parts of our experience) *become true just in so far as they help us to get into satisfactory relation with other parts of our experience*, to summarise them and get about among them by conceptual short cuts instead of following the interminable succession of particular phenomena. Any idea upon which we can ride, so to speak; any idea that will carry us prosperously from any one part of our experience to any other part, linking things satisfactorily, working securely, simplifying, saving labour, is true for just so much, true in so far forth, *true instrumentally*."*

All our conceptions are therefore instruments, useful for manipulating the immediately given.

* James, *Pragmatism*, p. 58.

We have thus to make experience. It is nothing given to us ready made, to which we stand in a merely receptive attitude. At first, we may suppose, there is chaos, a mere blur of sensation-contents, colours, pleasures, pains, &c. Out of these we gradually construct a cosmos. There is here little permanence. There is, however, a felt self-identity, and this dim feeling, unripe and undeveloped though it is, gives occasion for our first great postulate—the postulate of identity. Certain portions of our original blur attract attention—*e.g.*, bright colours. Then these are recognised on their recurrence. But the mere repetition and felt recognition of the like is not sufficient to give us our principle of identity, we must have felt identity somewhere in order that we may be able to demand it when the like recurs. This is, as we saw, provided in the felt self-identity. Thus the felt sameness of the continuous conscious life suggests the clue to the recognition of the same in the recurrence of the like.* Thus an object that disappears from the field of consciousness does not now merely go out like a candle; it persists, though unnoticed.

This postulation of identity was, however, a bold speculation on the part of the primitive consciousness. From its point of view there was no *a priori* reason why it should be successful, why

* Cf. Dr. Schiller, "Axioms as Postulates" in *Personal Idealism*, pp. 97, 98.

it should be true. But it was made and, together with other equally bold postulates, it worked, and was therefore true. But the objection will be raised that it was true not because it "worked," but it worked because it was true, and its truth consisted in its agreeing with reality, it was true because there were really enduring things outside consciousness. But we are here falling into the great fallacy to which psychologists and philosophers are liable—i.e., substituting their own consciousness, knowledge of the world, and point of view for those of the conscious psychosis they are examining. We have come to take for granted the existence of things which persist in existence out of consciousness, and we look upon the ideas of the supposed consciousness as true in so far as they agree with these conceptions of ours—i.e., in so far as they mirror, copy this reality. But the mind which we are examining cannot get out of itself, and therefore even though truth *did* consist in copying some external reality, yet it would have no means of knowing this. It postulates the persistent identity of some of its objects, it finds it useful to do so, and it sticks to this opinion. Of course, it does not raise the question of the truth or falsehood of this opinion, it does not consciously even regard it as good or useful ; but the opinion is, as a matter of fact, useful, and the primitive mind continues to use it.

Similarly we group things into various kinds and classes. At first this classification is very loose,

and from our present point of view very inadequate. It moves only in the widest generalities. But it is most useful, as we shall see, in the struggle for existence. It gradually gets more and more particular and detailed. Now, again, we can give no *a priori* reason why such grouping should be possible; as both Kant and Lotze have pointed out, there is no reason why things should not be so unlike as to refuse to admit of classification—at least classification that would serve any purpose.

Yet, taken in conjunction with the concept of cause or regularity, this classification may be most serviceable. For should we determine to risk the speculation that like things behave in like ways, we are furnished with a most potent instrument for dealing with our experience. If a heavy stone drop on my foot and it hurts, I may assume that a similar heavy stone will under similar circumstances also cause discomfort. There is no reason, again, which we can give *a priori* why this should be so, why nature, instead of displaying so much regularity, should not rather be a cosmic nightmare. In any case we lose nothing in postulating regularity, for should nature be really conformable to law we are clearly the gainers, whilst, on the other alternative, it does not help us in the least to know the worst.

It was in much the same fashion that the remaining categories of common sense, such as things and their attributes, minds and bodies, one time, one space, subjects and accidents, causes and

effects, appearance and reality have worked their way to recognition. Perhaps we may dwell for a few seconds on the two last mentioned. It is hardly necessary to point out the vast practical value of our idea of cause coupled with that of regularity, because, if we can only get the cause and conditions of any wished-for effect, and put them in operation, we can gain our end. At first the idea of cause was very anthropomorphically conceived, which seems to show that consciousness of our own causal energy was what suggested this idea. Thus the proper account of the origin of our notion of cause is not that given by the old over-intellectualised empiricism, which tried to show that the belief in the scientific conception of cause, that mere shadow of its former self, was the result of simple passive perception of innumerable instances of its occurrence. The idea of external objects being causes was probably the result of a much more complicated process in which sight of the object, movement towards the object, sight of the object and our hand coming into contact, accompanied by a new sensation, possibly our reaction thereon, all played an important part.

As regards the distinction of appearance and reality, the first impulse is to look upon everything as real, or, to speak more correctly, to treat and react on everything as real. But we cannot rest thus in what immediately appears and treat it as ultimately real. There are too many clashings within it. It cannot possibly be taken as true fact,

true reality, for as immediately experienced it is a meaningless chaos, merely the raw material of a cosmos, the stuff out of which real fact is made. Some portions of it serve our purpose, others are absolutely useless in this respect. Thus the principle of selection enters in and the distinction arises between that which is merely appearance and that which is reality. For ordinary developed thought this distinction is used, for example, to separate dreams, fancies, reveries, subjective idiosyncrasies from what is objective. But science goes further and reduces to the level of appearance much of what ordinary thinking is content to look upon as reality. Philosophy goes further still, and with some systems there is perhaps a tendency to reduce our whole concrete experience to mere appearance.

“ Thus Truth and Reality grow for us *together* in a single process which is *never* one of bringing the mind into relation with a fundamentally alien reality, but always one of improving and extending an already existing system which we know.” * Our thought is always occupied either in the better rearrangement and systematising of the old stock of experience, making our world-picture more coherent, more harmonious, or in connecting with it in a similar fashion new facts or claimants to be facts. This organisation, which uses the point last gained as a starting point for further progress of the same kind, was primarily undertaken almost

* Schiller, *Studies in Humanism*, pp. 185, 186.

entirely for purely practical purposes, using "practical" in its most "brutal" signification. So far thought is a biological function, it is a powerful means for helping the organism to develop and keep itself in existence.

A judgment is true then, or rather is used as true, because it produces and leads to satisfaction. At first the desires that have to be satisfied are, comparatively speaking, few in number, and are mostly connected with the preservation of the individual and the race. But fresh desires afterwards appear upon the scene: what were at first mere instruments of satisfying desires, and hence derived their value, can, by what Hartley calls "the law of transference," have attributed to them even a higher value than the satisfaction of the original desires. Similarly with the development of the individual and the race fresh desires spring up, such as those which are classed under the head of ethical and æsthetical. And when a sufficiency has in general been provided among a certain class to meet the needs of life, knowledge, that instrument which up to this has had but a vicarious worth, may be sought for its own sake.

Now, with this increase and development of desires, the question of truth becomes more and more complicated. It is further complicated when we take into account the enormous influence, which the opinion of our neighbours both about ourselves and our opinions, is capable of exercising upon us. This means that we expect a truth not

only to provide us with, as it were, subjective satisfaction, but that it will be a matter of grave dissatisfaction to us if we do not succeed in getting it accepted by the rest of mankind or at least by the other members of our circle. So strong is this controlling social influence, that it is hardest to shake these generally acknowledged principles, truths or prejudices.

The pragmatist theory does not therefore encourage us to play fast and loose with truth. It does not mean that anything, which, for the moment, I like to be true, is true. It holds that truth consists in *verification*, in *verifying*, that it is to be tested by its consequences, by its ability to produce satisfaction in the long run. Moreover, we must remember what we said above about the marrying function performed by truth ; it knits up the present with the past. Now, this mass of past beliefs is there, we cannot get rid of them at will, they play a most important part in determining what idea shall work and be true, and what shall fail. It is only by leaving this storehouse of past beliefs entirely out of sight, and the important, nay almost all-controlling, influence which pragmatism assigns to it, that we can describe this theory as allowing a man to believe what he likes.

The usefulness of abstract thought primarily consisted, as we have seen, in its enabling us to get about better among the particulars of sense, to get more expeditiously from one to another, in providing short cuts, as it were, quick modes of

transit. But abstraction is always relevant to the purpose for which it is made. The purpose which we have in mind is really what guides us in deciding to what aspect we shall pay attention and what abstract from. There is here naturally always a risk that we may have abstracted from something which may prove of importance, and this may show itself when we try to apply our theories again to our concrete experience.

Similarly, the truth of any statement depends on the question to which it may be regarded as an answer, and this depends again on the purpose. So also the method of any science is really controlled by the purpose it is meant to subserve. What aspect of reality is to be taken into account in any particular set of investigations depends on purpose. When, consequently, we determine to investigate the spacial relations of objects, we leave everything else out of sight; when, for instance, we investigate the equality of the sides and angles of a triangle we take no account of the colour of the chalk we use, or of the breadth of the lines. Pragmatism is not here bound to discuss the question whether the equilateral triangle is a better symbol for justice than the scalene, whether the circle is better or more beautiful, and therefore more productive of satisfaction than the ellipse, so that we must assume that the stars must move in circles, not in ellipses. We have determined to abstract from such considerations, and in bringing them in we should be guilty of incon-

sistency—i.e., we should be frustrating the act of thinking, which we should never dream of doing, having found it such a very valuable, in fact an invaluable, instrument. Pragmatism will gladly acknowledge that mathematics must not be influenced by ethical and aesthetics¹ considerations, it will merely insist on pointing out that the whole mathematical treatment depends on human purpose. Within the particular sciences we must “play the game,” we must obey the rules and regulations, we must not run counter to the presuppositions. But no amount of consistency within the science will in itself be a guarantee of the absolute truth of its doctrines. That depends on the truth of the science and its point of view. The axioms on which any science rests are largely in the nature of postulates, hypotheses, which are accepted on account of their success in their department. The final test, then, of a science and its axioms is the advantage it is in organising or helping us to manipulate the given of sense. Thus Euclidean geometry is truer than Lobatchewskian, not in the sense of being a more accurate copy of some independent reality or archtype in the divine mind, but in being handier, just as the francs and centimes are handier than the pounds, shillings and pence system.*

These considerations will also show us that the maxims which have been very successful in physical

* Cf. Poincaré, *La Science et l'Hypothèse*.

science, such as the conservation of energy, have limits of application. For purposes of physical science we may assume absolute determinism, but the moment that this postulate is used as a theory which may interfere with our ethical and aesthetical life, we are bound to point out that it is, after all, in its extreme form, but a postulate, and that our final justification for assuming it must be found in reference to practical life, which naturally comes under the jurisdiction of ethics. A rule, a maxim, a postulate cannot slay its *raison d'être*.

Having thus put forward a theory which found the essence of truth in its ability to provide satisfaction, and recognising, as they do, the *distinction* * which exists between the *what is* and the *what ought to be*, it would seem that a theory of Ethics was absolutely necessary to complete, or even to give meaning, to the pragmatists' epistemology. Without it their whole structure seems to hang in the air, without any foundation. Yet the leading protagonists of this mode of thought seem to have been in no hurry to supply this pressing need. In the absence of any definite teaching on the point, it may be no harm to speculate what the main tenets of a pragmatic ethics would be like.

No more in Ethics than in Metaphysics and Natural Science, is there any room for absolute truths; in last analysis we must be content with

* Pragmatists recognise this *distinction* whilst they insist that the investigation of the one ought not to be *separated* from that of the other.

probabilities and working-hypotheses. Here, perhaps even to a greater extent than was the case in the theoretic evaluations of truth, the individual temperament must be an important deciding factor. The greatest satisfaction in the long run is the criterion. This introduction of the idea of the *balance* of satisfaction over dissatisfaction makes for a certain amount of agreement among the ethical judgments of members of the same community. But the social-pressure factor, which we saw was also operative in building up our idea of objectivity and theoretical truth, plays a still larger *rôle* here. Owing to the immense importance of the issues, individual idiosyncrasies are much less easily tolerated in the case of ethical judgments, which are put into action, than in the theoretical sciences, and are visited more frequently and more severely with the displeasure of the community—the prison replaces the mad-house.

The aim, however, of pragmatism, in so far as it makes any pretence to be a theory of valuation and not a mere record of what happens or is likely to happen, will be to secure the greatest “breadth” of life combined with the greatest unity. The Ideal would be to have an absolutely full and varied life, which at the same time was a perfect Unity. This ideal, however, is unrealisable, and we must be content with very distant approximations to it. The question then arises, which side must be sacrificed, the unity or the variety? No absolutely definite answer can be given.

Different natures will decide the matter differently. Some will chose to cling to unity at all costs, others will think that variety is the more important element. Pragmatism will, as usual, take a middle course ; neither unity without variety, nor variety without unity. Against the absolutistic ethics it will object than in the effort to lay down absolutely necessary laws it has been forced to become a purely negative science ; instead of teaching men what they ought to do, it has to content itself with telling them what they must not do. Against this tendency, which springs from the over-emphasis of the importance which unity should occupy in our ideal of life, pragmatism will insist that positive teaching ought to be the primary aim of Ethics. But it will also point out that the insistance on mere variety alone means the denial of all ethics, of any code of conduct and morals. How this compromise between the claims of unity on the one hand and variety and fulness on the other is to be arranged must in each case depend on the individual, and the decision here, even more evidently than in the case of theoretical judgments, involves the element of personal risk.

3. COMPARISION OF CRITICISM AND PRAGMATISM.

We are now perhaps somewhat in a position to form some general ideas about the relation of Criticism and Pragmatism as theories of truth.

It may not be inadvisable therefore to try to summarise results by instituting an explicit comparison in a few of the outstanding features.

One of the main distinctions between Kant and the present day Pragmatists is to be found in the fact that, whereas both took as their starting-point the individual of psychology, the Pragmatists adhere more steadfastly to this position and its implications. A consequence is that truth is regarded by them as a dynamic relation, whilst with Kant it tended to be static. Kant seems to them to presuppose some kind of copy-theory of truth; he did not indeed agree with ordinary naïve realism, but he had an ideal of a perfect experience, an organic whole, thoroughly systematised, and tested the truth of judgments in reference to this. But this experience is no object of human knowledge, and cannot be known by the individual, and consequently, according to pragmatism, it must be left out of account. An idea or a judgment is true not because of any function it might fulfil, or because it might be necessary in an ideally perfect experience, but because it actually helps to organise, render more perfect our, at present, very imperfect human experience. Experience is thus the touchstone for both, as ideally perfect for Kant, as yet in the making for pragmatism.

Closely connected with this distinction between truth being dynamic for the pragmatists but static for Kant is the different attitude assumed to the

relation between Psychology and Logic, between problems of origin and validity. For the conception of truth as dynamic really means that a proposition which claims to be true must have this claim tested with reference to the function that it exercises or has exercised in making experience. The rigid separation of psychology and logic, of the investigation into the validity from the history and development of knowledge, already presupposes a static conception of truth. With Pragmatism, however, truth means verification, or perhaps, since it is not necessary as a general rule to verify many of our beliefs, verifiability.

Both again start in the individual consciousness, and thence proceed to show the conditions which render ordinary experience possible. Kant, owing perhaps largely to the water-tight arrangement in which he holds the faculties, is compelled to assume absolutely necessary general laws and categories in order to explain how objective experience is possible. Pragmatism, on the contrary, keeping more in touch with actual thinking, shows the importance of such conditions as the feelings, desires, will and the social element in the creation of the ordinary objective world of experience. The one objective experience, which shall be the same for all, and has that compelling character of necessity *—the presupposition of Kant's whole reasoning in this respect—it regards as an

* *V. supra*, pp. 11 and 12.

unjustifiable assumption and as a desertion of the individualistic standing-point. On the strength of his analysis of the conditions of the possibility of experience Kant was able to institute a criticism of fundamental concepts. In this respect Pragmatism is in a way somewhat more thorough. Both agree, indeed, to a certain extent in holding a *homo mensura* theory. But Kant spells *Homo* with a big *H*, the pragmatists use a small one. In other words, the critical philosophy limits the valid application of theoretical knowledge and its categories to human experience; they are incapable of telling us the nature of the ultimate reality, the thing-in-itself; yet for human experience and within these limits it is possible to formulate some necessary laws and axioms—laws and axioms which are entirely independent and logically prior to the individual experience and the history of its growth. Pragmatism insists on the instrumental character of all our conceptions, even of those which seem most fundamental, and points out that their practical utility is no guarantee that they will also be valid, or even have any definite meaning, if we refine them too much.* But, even within the world of human experience, Pragmatism denies the existence of any necessary and *a priori*

* Cf. Schiller, *Studies in Humanism*, pp. 68–69, 112, 118. It is thus it would explain many “metaphysical” puzzles. Concepts which are framed for ordinary thinking, and used with success within certain limits, cease to have any definite meaning when the attempt is made to render them absolutely accurate and exact.

laws and categories. Unlike Criticism, it insists on the strongly individual and personal character which still attaches to experience, to each man's world, notwithstanding the various factors which tend to produce agreement in this respect. After all that has been said it is not necessary to insist any further on the fact that, according to the Pragmatist, this does not mean opening the door to absolute arbitrariness in the construction of experience and in the conception of truth. The belief that such consequences could result can only arise from a total neglect to take into account the actual factors which are operative in the production of knowledge, and to some of which I have already drawn attention.

Nor will Pragmatism be put out by this personal tinge which clings to our world—it will regard it rather as a blessing than a curse. Personality after all is more important, more ultimate, so to speak, than physical fact. Kant perhaps had something similar in mind when he put forward his doctrine of the primacy of the practical reason, and still more in his conception of the world as in its history realising the moral ideal. Yet it is very important to insist on the fact that Pragmatism is not a development of the Critique of Practical Reason. At first sight it might appear that the greatest resemblance between Kant and the pragmatists was to be found in this sphere. But this is really not the case; the closest affinity is to be found in the radical empiricism and the

insistence on the spontaneity of the understanding in its theoretical use, which are common to both.* True, both hold the primacy of the will, but this formula has by no means the same significance in the two systems. For Kant this meant that our *moral* nature strikes deeper roots than our theoretical, that the objects of the Practical Reason, its value-judgments, can lay claim to a reality which the Theoretical Reason can never reach; and finally, that the Practical Reason can posit the Existence of God, Freedom and Immortality as firmly established objects of belief. But, even in his *Ethica*, Kant's worship of the general notion and the *a priori* law, the intellectual element, is still the striking feature, and this because he holds that the intellect is alone trans-subjective, and is consequently the only faculty which can guarantee objectivity. Man is for Kant an object of absolute worth, but man, not as an individual, but as embodying the general notion of humanity, and as subjecting himself to the universal moral law. In fact with Kant the much-talked of primacy of the will was a logical primacy, and the result of a strictly epistemological enquiry. This is not so in the case of Pragmatism, here the interpretation, which is given to this doctrine, as well as the series of investigations which lead to its acceptance, are in the main psychological. We have to do, in fact,

* Even this spontaneity has different meanings for both, for Kant it is logical, for the pragmatists psychological.

not with the logical primacy of the immutable moral law, but with the important place occupied by the Will, with its desires and appetites, moral or otherwise, in building up our cosmic-outlook, our *Weltanschauung*, our world of experience.

Pragmatism contains two heterogeneous elements, between which there is no necessary logical connection. On the one hand, it is radically empirical, and refuses to acknowledge the absolutely necessary character of any judgments; all axioms are only postulates, and the truth of any judgment is to be estimated according to its usefulness as a function in producing harmony in experience: the conception of truth, in fact, is dynamic not static. This is a position compatible with the most pronounced intellectualism, if we take this to mean simply that theoretical considerations alone ought to determine the truth-value of a judgment. On the other hand, there is the doctrine that the *final* test of truth is to be found in the ability of the judgment, if accepted, to produce satisfaction, this being taken to mean satisfaction of *every* kind; the judgment which in the long run produces most satisfaction is most true. It is with the "radical empirical" element in pragmatism that Criticism is most closely related.

A striking resemblance, combined, however, with characteristic difference, is to be found in the treatment of the Antinomies. According to Professor James, the "history of philosophy is to a great extent that of a certain clash of human

temperaments." * The philosophy or metaphysics a man adopts is largely decided by the way in which his character, as it were, "loads the dice." The great antithesis in Philosophy has been that of which Rationalism forms the one side and Empiricism the other. They owe their origin to the undue emphasis of one or other of the two great factors which go to make up our daily conscious life, principles and facts. Both are necessary for life,† but philosophy, as a rule, contents itself with one side, regarding it as alone representing reality. Hence arise the two great classes into which philosophies may be roughly divided. To which class a man will owe allegiance depends rather on temperamental than on rational grounds. The "tender-minded," with their leaning towards idealism and optimism, have generally chosen the rationalist standard; the tough-minded, with a bias in favour of pessimism and materialism, have generally been empiricists.‡ Now, the possibility of this difference is due to the fact that "the world is indubitably one if you look at it in one way, but as indubitably is it many if you look at it in another."§ The character of our philosophy

* *Pragmatism*, p. 6.

† *Ibid.*, p. 9.

‡ *Cf. ibid.*, p. 12, for the further characteristics of the "tender-minded" and the "tough-minded" respectively.

§ *Cf.* "Critique of Pure Reason," M: 408-9, A: 666, B. 694. "This reasoner has at heart the interest of *diversity*—in accordance with the principle of specification; another the interest of *unity*—in

depends on which of these two aspects our temperament urges us to over-emphasise.*

All this bears a striking resemblance to what we saw was the essence of the doctrine of the Antinomies from the Kantian point of view.† Yet it is important in this respect to bear in mind that the analysis we are now dealing with is psychological, whereas Kant's, in its essential features, was strictly epistemological. Where, however, as is sometimes the case, Kant discusses what I may call the psychological affinities of his subject, the similarity between the two views becomes, if possible, even more striking.‡

accordance with the principle of aggregation."—*Cf.* M. 287, A: 461, B: 489. "In both the mode of proof is quite in accordance with the common procedure of human reason, which often falls into discord with itself, from considering an object from two different points of view." *Cf.* B. 401, 403, A: 654, 657, B. 682, 685.

* Pragmatism, not unlike Criticism, insists on both—a pluralistic Monism (*cf.* James, *op. cit.*, p. 13):

† V. *supra*, p. 198 *seq.*

‡ *Cf.*—*e.g.*, M. 293, 294, A. 466, B. 494 *seq.*—where he discusses the *motives* which lead to the adoption of the thesis and anti-thesis respectively.

**GENERAL COMMENT ON CRITICISM
AND PRAGMATISM**

GENERAL COMMENT ON CRITICISM AND PRAGMATISM

CAUSATION is the most characteristic concept in Kant's table of categories; it is, in fact, the Kantian concept *par excellence*. It was Hume's treatment of causation that broke his dogmatic slumber, and made him for ever desert the ways of Rationalism and Empiricism and strike out on an entirely new line in philosophic method. Failure, then, on his part, to establish the high claims which he makes for this concept or axiom—the concept or axiom, moreover, which best illustrates the peculiarity of his method—must necessarily raise doubts unfavourable to the possibility of the entire task which he undertook. And yet the attempt to prove that the principle of causation was necessary and *a priori* seemed to involve Kant in hopeless difficulties, to lead him to conclusions which were at variance with his starting-point or with what was involved in it. The fundamental doubt must therefore present itself, whether it is possible to determine the logical conditions, or presuppositions, which guarantee the objectivity of experience?

It will be noticed that Kant assumed that these conditions and presuppositions are entirely intellectual. He tries to find them in general notions and axioms. In the very formulation of the

question therefore he reveals himself as a representative of the Platonic tradition : of the faculties, the Intellect or Understanding is alone trans-subjective ; Desire and Sensation can never enable us to transcend empirical subjectivism. But Kant differs in important respects from most other adherents of this tradition. According to them the understanding revealed the objectivity only of general notions and rules ; the particulars of sense could never give more than probable knowledge. Kant also believes that the understanding can reach *a priori* and universal truth, but he does not accept the rationalist account of the matter. He thinks that only those synthetic judgments can be regarded as *a priori* which are necessary to guarantee objectivity for our ordinary experience. In this way of stating the problem there is involved the twofold assumption that we start with a world-picture, which at its face-value cannot pretend to be anything more than subjective, and that it is possible to discover conditions or rules by fulfilling which it can validly claim objectivity.

Thus Kant will investigate the conditions of objectivity, not of this or that object or event, but of experience as a whole. Yet his answer owes its plausibility partly to the fact that these two very different problems are not kept clearly distinguished. Systematic connection by means of causality and the other categories in the case of concrete objects and events may in last analysis be the final test of objectivity. But in this

respect it is necessary to remark, that even here—especially if we assume Kant's mechanical view of the universe—it is impossible to attain to more than probability, and, that the very application of the test at all implies that we take the world in general for granted, that we accept the greater portion of our world-picture as objective. The objectivity of any event is shown to be probable if it is connected, according to certain laws, with what we already accept as objective. The wider and more complete the system to which it is shown to belong, the stronger as a rule is its claim. But this method can never give complete certainty. Perfect systematisation of the contents of our experience is not possible, even approximately; nor even if it were could it alone guarantee objectivity. At best we should know simply that one event was as objective as another, but our systematised world-picture as a whole might be no more than a dream. This method of distinguishing reality from illusion or appearance, has applicability only *within* experience, and fails when the attempt is made to apply it to experience as a whole.

His "streak" view of causation helped to veil from Kant some of the difficulties which beset Criticism. Yet, even in this case, the conception of the infinite causal regress might have forced upon him the impossibility of *proving* objectivity. That it did not was probably due to the essentially "concrete" nature of Kant's thinking, and to the fact that he was willing to treat the bulk of his

experience as already having had its validity established.

Thus it would seem as if Kant was attempting the impossible. From a starting-point that was frankly subjective he tries to reach objectivity. It is true that the acceptance of the ordinary empirical every-day experience of the common man was one of his presuppositions. But the essence of his method consisted in investigating what was involved in the world-picture of the individual, a mere complexus of sensations, claiming to possess the character of objectivity which is one of the marks of the ordinary man's experience. The critical method involves this subjective starting-point no less than the objective goal. Even the objective world, which is, so to speak, the result of his investigations, is not anything which has an existence apart from the unified sensations with which he started, but remains this complex of sensations. The enquiry has brought nothing to light which in any way changes what I may call its existential character ; all that has been done is to show that, if it fulfils certain logical conditions, it can pretend to be something more than a mere dream or phantasy of the individual, may in fact justly be considered objective.

Thus Kant is, in one signification of the term at least, a subjective idealist. There are, however, grades in subjective idealism. In its cruder form it owes its origin sometimes to the conscious, but more often to the unconscious, working of the

Cartesian metaphysics, which looks upon the soul as a substance which is unextended in the same way as a mathematical point is unextended, and has its seat somewhere within the head. Wherever this theory, wittingly or unwittingly, forms the starting-point of psychological and epistemological investigation, the great problem is to show how the soul could get into cognitive contact with the world from which it has been thus separated. For those who held that the transition from the subjective to the objective was possible, the answer generally was that we concluded from the sensations to their external cause. Others rejected this piece of mythical psychogenesis, and, denying the existence of any such soul substance or "external" world, were faced with the problem of explaining that belief in it which the ordinary man possesses. The difficulty to which this belief gave rise was met in pretty much the same way in which those who held the doctrine of hypothetical or mediate realism explained the objectivity of experience by the *projection* theory. The sensations and impressions were originally *in* the mind, but they were ideally *projected* out of it. The projection theory—a reversal of the true order—owes its origin either to the psychologist's fallacy or to the conscious or unconscious influence of the Cartesian soul-substance theory.*

* Cf. *supra*, pp. 27, 28. In many cases the distinction between the two alternatives disappears.

Many interpreters have supposed that Kant was a representative of subjective idealism in this cruder form. Undoubtedly there are not a few passages in his writings which, if taken by themselves, and not liberally interpreted in the spirit of his entire doctrine, lend some support to that view. References of his to the "thing-in-itself" sometimes have this unfortunate tendency. It is conceivable that at times, even during his critical period, Kant's mind may have unconsciously lapsed back into this particular attitude. But one of the aims of the present essays, in so far as they try to give an exposition of Criticism, has been to show that such an interpretation of Kant is wrong.* The distinction between phenomenon and noumenon, or thing-in-itself, is an epistemological or value-distinction, not a metaphysical one.† Kant remains within the fact. His task is not to bring the mind into contact with a reality that is alien to it. He does not set out from that divorce between mind and its object, which the projection theory presupposes. For him the distinctions "inner" and "outer" are distinctions which, in their ordinary philosophic interpretation, have application *within experience*, and are not used

* It was precisely this form of subjective idealism which he was so anxious to refute and to distinguish from his own.

† Cf. *supra*, p. 28. He even calls duties "things-in-themselves." Cf. Erdmann, *History of Philosophy*, Translation II., p. 479.

to connect experience with something foreign to it.*

Yet in last analysis for Kant also the world of experience is nothing that enjoys an existence separate from the sensations, whose systematic synthesis constitutes it. Thus he remains, despite all attacks on its cruder forms, a representative of idealism.

His point of departure—which exercised a controlling influence on his whole philosophy—as well as the particular stamp of idealism which was its inevitable consequence, is due to a subtler and more plausible form of the psychologist's fallacy. He accepts, apparently without any hesitation, the position that sensations as sensations (whether loose or combined need not concern us at present), form the only possible starting-point.† The next step is to see what conditions these subjective

* Cf. A. 369–378. He points out also that illusion and appearance (in the sense of phenomenal) are not the same (cf. M. 209).

† It would be an interesting question to discuss, whether psychologism in the exact form in which Kant took it over from Hume is essential to the critical philosophy. Without pretending to discuss the matter fully I may say that it seems to me that, though they may have influenced minor details, neither "ideational" nor "atomistic" psychology is a necessary presupposition of the critical method. For, if we consent to take our start in the subjective world-picture, then no matter whether our psychology be ideational or voluntaristic in its explanation of the psychical history of this world-picture, the question could still be raised, in exactly the same way, what are the guarantees of objectivity.

representations must satisfy if they are entitled to be considered objective. But this supposed passage from subjectivity to objectivity has really no place in the individual's psychical history. Yet the fact of such passage is assumed in the attempt to investigate the conditions under which alone the subjective world-picture is entitled to objectivity. The point from which Kant envisages his problems is not that of the ordinary man, and at no period of the ordinary man's psychical history has it been so ; it is the artificially created abstraction of certain psychologists. Kant apparently did not see the necessity of investigating the presuppositions involved in speaking of sensations as sensations. He seemed to accept the position that sensations were primarily given as sensations, and that their objective character was a matter for subsequent justification. Yet it is here that the main brunt of the battle between Realism and Idealism is borne. For the contention of Realism is that to speak of sensation as sensation, already presupposes a reality, whose existence does not depend on the existence of the sensation though it is expressed through the sensation as a medium.

That the projection theory reverses the actual order of the mental procedure in the beginnings of the conscious life may be seen from a hurried sketch of what actually takes place. The distinction between sensation and the object of sensation does not make its appearance till late in the

development of conscious mind, and it is probably not till a certain stage of philosophic thinking has been reached that it can be explicitly formulated. But long before this period in mental evolution it was held that external objects were known through sensations. At the commencement of mental life there were no clearly-defined objects of cognition. Colours, sounds, tastes, pleasures, pains and the numerous other products of the stimulation of the organs of the body, were mixed in almost inextricable confusion. What "was there" was not explicitly an object of three dimensions, but possessed certain characteristics of extensivity or massiveness, which in the course of mental evolution developed into space of three dimensions. Gradually a certain amount of order began to be introduced into this chaos. Objects were distinguished; some were seen to be more fleeting than others; the rough distinction of things from their attributes and qualities began to make its appearance; and a commencement of an order in space and time was made. Among the various objects which, so to speak, stood out from the indistinct background of confused sensation-contents, was one which, owing to its continued presence, and the close association of changes in it with the feelings of pleasure and pain, attracted particular attention. This, our own body, was simply one among a number of other objects, and had no better epistemological birth-right than any of the others. However, in the further development of mental life,

it was gradually borne in upon us that changes in this body, and particular portions of it, were intimately connected with the appearance or disappearance of pleasure or pain, or sensations of touch, light, colour, sound, smell, and taste. These sensations were gradually localised within the body. Thus the process is the exact reverse of that which the projection theory describes.

But as yet there was no suggestion of what I may call an independent or semi-independent existence belonging to the sensations. The view of them as such entities probably arose when it was noticed that other human beings, to whom we attributed the same constitution as ourselves, shared with us, so to speak, a common world of perception. Objects of this world we saw external to them ; and the problem naturally arose (though, of course, it was not explicitly formulated as a philosophical problem) how *they* came to perceive these objects. The answer : by means of sensations, led straightway to the localisation of sensations as something having existence within their bodies. Thus the possibility of speaking of sensations *as* sensations is only explicable on the prior assumption of something existing independently of the sensation, which forms its object. This explains the impossibility of subjective idealists to adhere consistently to a purely subjective position.

A similar train of reasoning, as we saw, was pursued in the case of the psychologists' fallacy,

which in one form or another lies at the basis of all idealism of the type we are now discussing, but in this case conclusions were drawn which never occur to the "natural" man. The psychologist A gives an account of the perception by B, of certain objects C. Now, as has already been pointed out, A is external to both B and C, and these again are external to each other. A perceives C either directly or indirectly stimulating some organ of B's. He then (imaginatively at all events) traces the further progress of that stimulus until it reaches B's brain. The modification of B's brain is the condition-precendent of a sensation on the part of B. Now for A the object of B's sensation is external both to B and to B's sensation, which is naturally localised within the brain-cavity of B. The problem arises therefore for him how B, to whom his own sensation alone is present, can possibly get into contact with C. Instead therefore of the sensation being something which should bring B and C into cognitive relation, it is really a barrier between them, a *tertium quid*. But the whole problem, as thus formulated, is entirely a "manufactured" one. It owes its existence to the presumption of A that the problems that arise for *him* as to the relations in which B and C stand to each other, must also arise for B. Thus the problem as it exists for A is due to the fact that A does not consistently remain in his own position, or consistently put himself in the position of B, but continually (however unconsciously) shifts

from the one to the other. Now the final act in this drama of confusion is reached when A transfers to himself the problem he has invented for B. He has now not only confused the problems which arise for B with those which arise for him when contemplating B's mental states and his environment, but by a further substitution has blended these in turn with questions which might arise for himself in considering his own experience.

Idealism thus rests on false and misleading abstractions. Its fundamental doctrine that we can know only our mental states * is not only not self-evident, as seems to be assumed, but is actually false—it is impossible to know only our own sensations as sensations. The reasoning seems to be that because we can only know *by means* of mental states, therefore we can only know them. But, in the case of memory, we “transcend” the immediately given mental state; even where what we call to mind is a previous mental state, the fact remains that what we cognise immediately by means of the present state is something whose existence was not dependent on it.

It is not within the scope of the present essays to discuss in detail how far Pragmatism is successful

* Cf. *Critique of Pure Reason*, *passim*—e.g., A. 101. “Phenomena [to which, of course, our knowledge is limited] are not things-in-themselves, but only the play of our representations, all of which are finally nothing but determinations of the internal sense.”

in avoiding the difficulties which beset the path of Criticism. In so far as it regards the "individual consciousness" as its starting-point, and holds a doctrine of "radical empiricism," believing that "experience" is self-supporting, it lies exposed to all the objections which we have been urging against Criticism. In one sense its voluntaristic psychology, which holds that the importance of desire, will and purpose in determining the character of even our cognitive activities should not be ignored, and its "empirical" and "anti-rational" tendencies make it even more subjective than Kant. Yet it represents occasional aspects which seem to reveal a closer relationship with realism; nor is it altogether certain that with some modification which would leave the essence of its method untouched, a pragmatic Epistemology might not be found logically compatible with a realist Metaphysics.

Apart, however, from the difficulties common to it and to Criticism, Pragmatism has difficulties special to itself. To a consideration of some of these we must now pass, delaying only to recall the fact upon which stress has already been laid, that the Pragmatic theory of truth exhibits two sides, between which no strict logical connection is discoverable, and which are of very unequal value. For Pragmatism holds two main tenets:—(1) Axioms are only postulates; the conception of truth is dynamic not static; we can never reach more than probability; and (2) the final test of truth is the

tendency to produce satisfaction, and under "satisfaction" is included satisfaction of every kind.

It has already been suggested that the dynamical theory of Truth, which Pragmatism champions with so much energy, provides an epistemology which is more compatible with that radical empiricism on which both Criticism and Pragmatism are built than the actual theory advanced by Kant. From a certain point of view it is almost inevitable to look upon Pragmatism, in that limited aspect of it to which we are now confining our attention, as the logical development of the spirit of the Critique of Pure Reason.

Moreover, this conception of Truth, together with the doctrine that axioms are only postulates, need not be rejected in its entirety. This at least it may claim—it emphasises a truth that is very much in need of emphasis, that many judgments which claim to be axiomatic are really no better than working-hypotheses, successful postulates. In discussing this and other views, such as the doctrine that truth is dynamic in its character rather than static, it is well to bear in mind that Pragmatism, as a method, claims to be a logical rather than an epistemological theory. Thus it refuses to consider the distinction between the answers to the questions, (1) what truth is, and (2) how it is tested, as of any great importance. Bearing this in mind, then, it must be granted that, in the present state of our knowledge, the dynamic theory holds good of the great bulk of

scientific "truth": the truth of this consists in successfully knitting together various portions of our experience, in reducing partial chaos to a closer unity. From all this springs the further advantage that, with the reduction to their proper value of the high claims made on behalf of scientific theories, greater freedom of investigation is rendered possible—a result which is not altogether unwelcome at a time when scientific dogmatism tends to grow so intolerant. Certain scientific theories have been so successful in bringing about unification among the facts of the particular sphere to which they were applied, that they tend to have ascribed to them a kind of sacredness, which may, conceivably, at certain stages of scientific progress, act as a bar to the suggestion and acceptance of more suitable hypotheses, and even prevent the observation of empirical facts not, or apparently not, in harmony with them. This tendency, and the further inclination to attach the same value to a theory when applied in a sphere other than that in which its usefulness has been shown, is likely to be counteracted, at least partially, when the dynamical nature of scientific truth and the postulatory character of many so-called axioms is borne in mind.

The problems just now dealt with belong mainly to inductive logic. But the pragmatist insists that his theory is also to apply to the theory of deduction and the fundamental laws of thought. All axioms *without*

exception are postulates and nothing more; no judgments possess absolute logical necessity; logical necessity in fact, which is not ultimately reducible to psychological necessity, has no meaning and existence. But it is evident that here pragmatism is really yielding to the same prejudice which it accuses its rationalistic opponents of abandoning themselves to, and which in their hands leads to Absolutism in epistemology and metaphysics. Because a certain theory holds of many judgments, must it therefore hold of all without exception? Because many so-called axioms are shown to be merely working-hypotheses, must all axioms be so? From the fact that the "truth" of certain judgments consists in successfully uniting and, as it were, marrying different portions of experience, does it follow that there is no such thing as immediately self-evident necessary truth? The pragmatist is here yielding to that passion for uniformity which he throws in the face of the absolutist: the only difference is in the element which each of them determines to take as typical and to universalize. Writers of this school frequently claim that they make no attempt to deal with that abstraction of philosophers, *Truth*, their interest is only in the concrete *truths*; yet the attempt they are here making to force into a Procrustean bed all forms of general truth is a complete abandonment of this position. Finally, the arguments which they bring forward against the acceptance of such axioms as the Principles of

Contradiction and Identity presuppose the copy-theory of truth—against which they are always inveighing—in its crudest form. Because these and similar principles do not find evident illustration in the immediately given of sense, therefore they are not absolutely necessary principles! The same remarks apply with equal force to their treatment of the value and function of concepts—where, if anything, the application is clearer.

So far we have been dealing with what I may call the theoretical “moment” of the pragmatic theory of truth. It is not the most characteristic feature of pragmatism, nor is it that on which most stress has been laid by writers of this school; yet I am convinced that it is in drawing attention to the dynamic nature and postulatory character of many “truths” that the pragmatists have done their best *logical* work. They themselves, however, insist more on the thesis that ability to produce satisfaction, in the widest and fullest sense of that term, is the ultimate test of truth.

In reference to an undeveloped stage of mental life the two sides of the theory tend to approach and unite. A true proposition means a successful hypothesis, and at this stage the only hypotheses put forward are those which suggest means to a desired end. Here there is no difference between a successful hypothesis and one which satisfies desires. Thought, in this case, is merely a biological instrument, a powerful weapon in the struggle for existence. What the savage will accept as true

or rather treat as true, is largely determined by his desires and appetites. But, though this may be all that truth *means* or can mean for the savage, it by no means follows that for the philosopher, who is engaged in epistemological or logical investigations, this is what truth *is* or consists in, even at this early period of mental evolution. The fact that for the savage truth meant or was treated as meaning capability to satisfy desires may be very important for the savage and for the psychologist, but it leaves unanswered the logical question as to the *proper* test of truth, even for the savage.

The pragmatist will immediately object that the divorce here implied as existing between Logic and Psychology is an unwarranted assumption; that any logical theory, to be satisfactory and practical, must be based on psychology; and that it is useless to discuss what truth *is*, except in reference to the mental equipment, development and psychical disposition of the concrete individual. To all this the obvious reply is, that there is no absolute divorce between Logic and Psychology suggested, but that a distinction is insisted on which pragmatists themselves admit is necessary; the science which tests truths is not that which describes their origin and history or the significance and meaning which the concrete individuals attached to this quality of truthfulness. Again, if the claim is made that Logic must be based on Psychology, the obvious objection must be urged that Psychology, in so far as it makes use of

reasoning, and pretends to be science, must presuppose logic. Moreover, where is this Psychology to be found ? At the present day there seems to be very little agreement among psychologists, even as to the fundamental principles of their science ; thus it would seem that psychology stands in need of logic rather than conversely. Finally, though it may be granted that the determination of what *ought to be* should rest on a knowledge of what *is*, this by no means commits us to the acceptance of the proposition that in allowing his desires to influence him in his acceptance or rejection of the truth of a judgment, and in estimating all truth according to its capacity to satisfy desires, the savage was right, even from the point of view of the actual state of his knowledge.

But the inadequacy of this whole view as a theory of truth increases as we advance to higher and more developed stages of mental life. As the pragmatists themselves point out, the number of desires which clamour to be satisfied increases with great rapidity ; new interests and desires continually spring up. Knowledge, which started by being a mere instrument in aid of life or more comfortable life, and had its value estimated only in so far as it fulfilled this function, now becomes an object which is desired for its own sake ; and the attainment of Truth may come to be the most prized of the various ends which a man can set before him. Knowledge is now no longer a mere biological function which helps the individual in

the struggle for existence, but is an object of independent value. At this stage desires may still be very important in urging the individual to put forward new hypotheses, but the truth of these hypotheses must be estimated independently of their capacity to satisfy desire. The analogy of the sciences, to which Pragmatism is so ready to make appeal in other connections, is altogether in favour of rigidly excluding all reference, conscious or unconscious, to desires and personal interests as factors in *testing* truth. This does not commit us to a belief that the world is a mere mechanism, as if the exclusive objective validity of the mechanical categories were demonstrated. It is quite conceivable that the world is much more plastic than even the ordinary man supposes, much more capable of being moulded to our ends; but, though this hypothesis may owe its origin to our desires, the ultimate test whether it is true or not must be made without any reference to them. Tendency to produce harmony, to unify our world into a totality which would produce intellectual satisfaction may in many cases be our only means of testing the objective validity of various categories. But this is a view that is quite compatible with a pronounced intellectualism, and in no way bound up with the particular aspect of pragmatism which we are now discussing.

This dynamical conception of truth makes use of the theory of Evolution, but only as an analogy. Just as in the case of an animal or plant, an organ

could be most profitably studied by investigating the function it fulfilled in furthering life, so what the truth of a judgment means can only be decided by watching the function that it fulfils in the actual development of knowledge. The tenet, however, that the ultimate test of truth is satisfaction in general, uses the theory of Evolution as an established principle on which to build. Its theory of truth presupposes that knowledge was evolved because it was a useful biological function, and that those ideas are true, and are accepted as true which help the organism in its struggle for existence. But here we have a very glaring example of the fallacy of the vicious circle. The acceptance of any such hypothesis as that of evolution presupposes the existence of a test of truth.

But, even were all these objections brushed aside, it must still be urged against Pragmatism that on its own theory of truth it is false; as a test to be used to distinguish the true from the false, as something more than a psychology, it will not "work." With the advance to higher stages of life the number of desires that call for satisfaction very rapidly increases. We saw that, according to Pragmatism, a judgment was not true because it produced immediate satisfaction; this immediate satisfaction might mean a great preponderance of dissatisfaction "in the long run." Further, though the acceptance of a judgment may produce satisfaction in some directions, it may have the exact

opposite effect in others. Now, how are we to evaluate the different desires that we want to satisfy? Plainly not by "counting heads," for the satisfaction of one desire may easily outweigh the sacrifice of many others. Again, the desires are often so heterogeneous in kind—*e.g.*, organic, spiritual, social, ethic, aesthetic—that it is absolutely hopeless to try to find any common measure which might assist us in determining on which side the balance is likely to be. The same difficulty arises here as arose for Bentham in connection with his utilitarian calculus, but in a much more aggravated form, as instead of two kinds of values (pleasures and pains) we have now a large, but not exactly determined, number. We want a Logic of Values; but this is precisely what pragmatism seems unable to give us. But even had we this Logic, even could we reduce all the different values to one common measure and so estimate their claims, yet the difficulty of applying the canon thus got, would be practically insuperable; it would "not work."

The pragmatist will probably answer that we cannot get a theory of values which will be universal, which will be valid for everyone; this is a sphere in which the individual must judge for himself; what may be the greatest ambition of one man's life may appear absolutely worthless to another. But this confession of inability to solve a difficulty does not get rid of it. Even if what they seem to be contending for be granted to the pragmatists, still the difficulty remains in all its

force as regards the individual. He needs a canon to decide the relative value which he ought to attach to the satisfaction of his different desires, and Pragmatism cannot supply it. To tell him that he must take the risk is simply an abdication of the claim that pragmatism supplies a test of truth and a confession that it sinks into psychology. It may be able to give a plausible account of why a certain axiom or theorem is accepted, why it has worked, but it cannot decide whether it *ought to* be accepted and whether it is likely to work better than a new claimant which has just arisen. In their psychological investigations pragmatists may explain the origin of philosophic systems from mental prejudices, but where "useful" knowledge is concerned their theory is incapable of supplying a satisfactory test to distinguish what "works" from what does not "work." It is not a Logic of truth and falsehood or a Logic of anything else: it is a confession of the futility of all Logic.*

* In the comments which bring these essays to a close no attempt is made to give anything approaching an exhaustive or adequate critical evaluation of Criticism and Pragmatism; their object has simply been to give a few of the objections which the special problems dealt with have suggested against these two systems of Philosophy.

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